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THE APPLICATION OF A CONCEPT TO THE UNDERSTANDING OF A REGION: PEOPLE, TIME, SPACE AND IDEAS IN THE ECONOMIC CORE REGION OF ANGLO-AMERICA*

CLARENCE W. OLMSTEAD
University of Wisconsin

THE MOST acute phase of competitive human endeavor currently places upon the natural sciences the responsibility to excel in the perfection of destructive power and in the conquest of space. More fundamental, however, is the responsibility of the social sciences to perfect constructive insight leading toward the understanding of human society. The fate of mankind may, in the short run, depend upon the results of the first effort but inevitably it will depend upon the results of the second.

Both efforts in the United States rest in considerable part upon the base of public school education. We in the geography profession are failing to make a full and satisfactory contribution to that education—to the capacity of citizens to understand human society.

Do we at the research and university levels of the geography profession believe that we have nothing to contribute to the education of citizens, most of whom will never reach our college classrooms? Do we believe that fundamental geographic concepts will, with no effort on our part, be filtered down and used effectively in school classrooms? Who is going to be the interpreter if the geographer is not interested in the school and if neither the school textbook writer nor the classroom teacher is reasonably well trained in geography?

Part of the problem is concerned with the training and certification of teachers. Another part, to which I should like to direct attention, is concerned with subject matter. With a few notable exceptions, several of whom are in this room, the research and university levels of the geography profession have, through disregard and even disdain, permitted school texts and curriculum time to be filled with information about places rather than with information to be used for the development of signficant geographic concepts. Consequently, geography has lost merit, respect, and priceless opportunity.

The Theme: People, Time, Space, and Ideas

As an illustration of the kind of help that geographers might offer, I should like to suggest for use in the geography or social studies classroom a series of concepts that can contribute to the understanding of the world and its society. These concepts are embodied in the theme: People, Time, Space and Ideas.

It is simply this: that the pattern of human occupance of the earth is the result of the numbers, kinds, and arrangements of *people,* applying their accumu-

* This paper was presented, in a shortened form, in a joint session with the National Council for Geographic Education, has sponsored Meeting of the Association of American Geographers held in Pittsburgh, April, 1959.

lated sets of *ideas* to appraise and utilize the *spaces* which they occupy or control, and that such a pattern is continuously developing and changing during *time*. This is undoubtedly an old theme long used by some social scientists. It was applied in an attempted overview of world society prepared for social studies teachers and presented in recent issues of *Social Education*.[1] I believe that it is so basic to the study of human society at any time or scale that it might well be the central concept in the organization of the school curriculum in the social studies, thus developing a curriculum equally based in geography and history.

Let us attempt to apply the theme to a particular region: what is now the urban and industrial East, or economic core region, of Anglo-America. Please remember that this is an attempt to outline briefly a series of concepts, not to present a study unit ready for the classroom. For convenience, let us look at people and ideas in our chosen space at two separate times in the past, the first at mid-eighteenth century (Fig. 1).

The Beginnings of the Core Region at Mid-Eighteenth Century

About 1750 European peoples between the St. Lawrence and the Potomac numbered from one-half to three-quarters of a million. They were mainly from northwestern Europe, especially from England, and from the middle and lower economic ranks of society.

It is hazardous to characterize any society, especially a past one, in terms of dominant ideas. However, three basic ideas seem to have set this group, in the northern and middle colonies, significantly apart from those to the northward or southward, as well as apart from people in the European homeland or elsewhere. First was the adventurous quest for well-being through individual ingenuity. Second was independence of action. Third was participation in most of the functions of society by most of its members. This is not to suggest that these people could claim either the origin or the exclusive application of these ideas. It does seem true that these new Americans were somewhat unique in their motives for settlement, in their degree of independence from centralized authority, and in their opportunities to acquire property and participate in a developing economy.

These ideas were applied to a particular segment of earth space and its resources. Fundamental was the location of the space at the western end of the North Atlantic water highway, opposite the European homeland. The sea was a resource also in its yield of sea foods, salt and shells for subsistence and for export. The forest supplied timber for tools, buildings, ships and fuel, and wood ash for fertilizer. The agricultural land resources of the seaboard lowland and adjacent valleys compared not unfavorably with those of the European homeland. In fact, it is the similarity of the agricultural resource of the two areas that made it unfeasible for the American Northeast to develop a specialized, colonial agricultural export economy to supply an exotic product to Europe as did the South.

Most significant of all is the fact that this particular segment of earth space offered resources of soil, forest, mine and sea, all of which were useful but none of which was dominant. Indeed, it is location with respect to things outside the area, rather than earth resources inside, that becomes the more significant in the emerging character of this region.

The result of the application of this unique set of ideas by this particular group of people to this specific segment of earth space during this particular period of time was a diversified economy.

[1] Clarence W. Olmstead, "People, Time, Space and Ideas," *Social Education*, Vol. 22, Nos. 1, 2 and 3 (Jan., Feb. and Mar., 1958), pp. 15-19, 75-78 and 122-126.

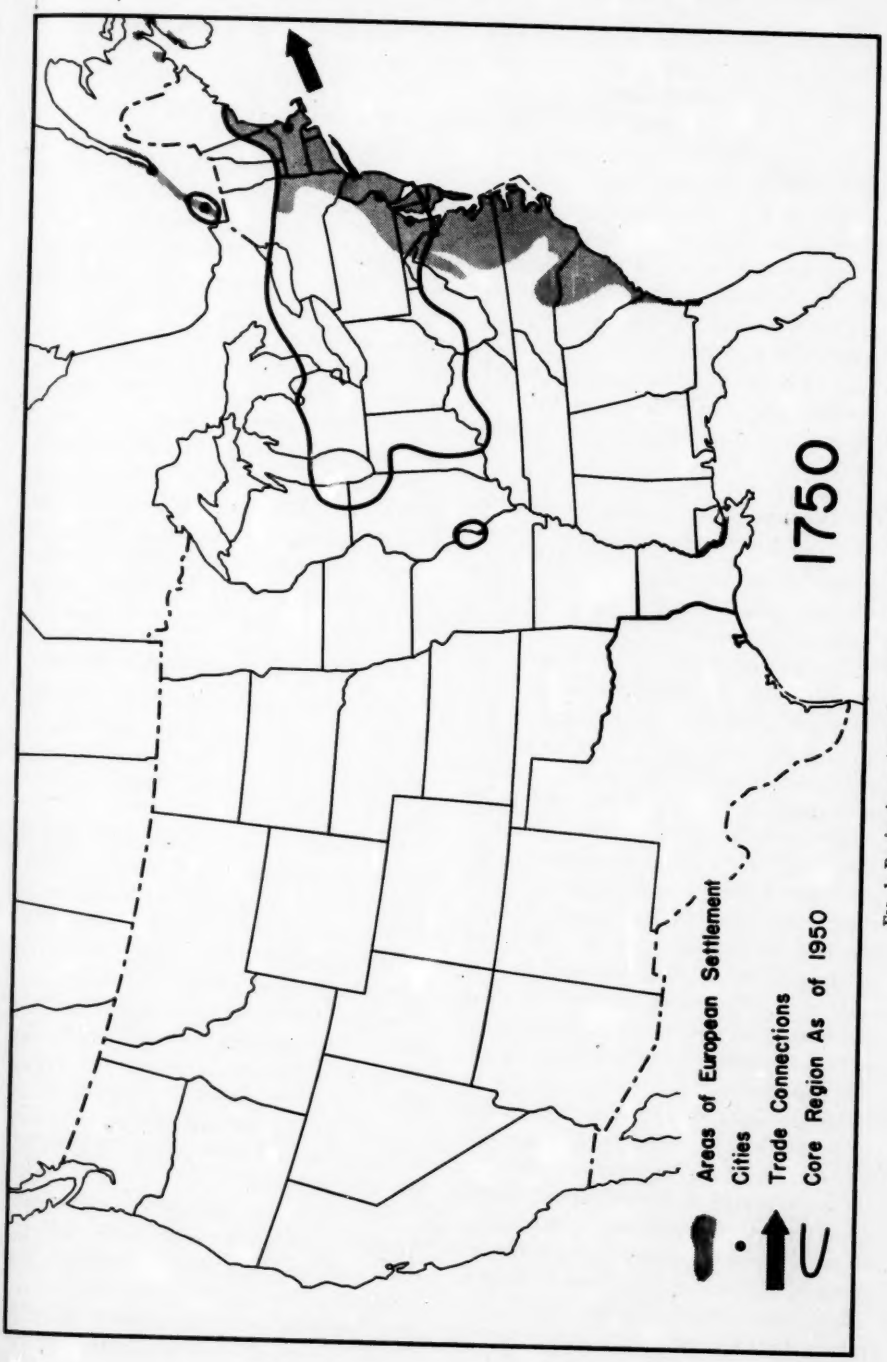

FIG. 1. Beginnings of the Economic Core Region, 1750.

It was not unknown for a single family to clear its own agricultural land, to use the timber to build its own ship, and to carry the products of its own farm, forest, sea front, and handicraft to Europe or its colonies. This was an economy in which ideas that were being passed freely back and forth across the Atlantic were applied to modest but diversified earth resources by most of the members of society, each free to use his ingenuity and his own labor to improve his well-being. It was an economy whose base was broad, in terms both of its variety and of its participants and therefore, also, of its possibilities.

The Economic Core Region About Mid-Nineteenth Century

Now let us skip ahead a full century and look briefly at the region in mid-nineteenth century (Fig. 2).

The people have changed more in numbers and distribution than in kind. They are comprised of the descendants of those present a century earlier and of many more immigrants, mainly from the same areas of Europe. Those of English origin have decreased relatively; those of Irish origin have increased. Considerable numbers of French-speaking people have moved from the St. Lawrence valley to the new factory towns of southern New England. The Atlantic seaboard and St. Lawrence valley remain the core areas, but settlement has moved beyond the Appalachians and is rapidly occupying the Old Northwest.

The ideas of a century earlier remain basic, but at least two significant new sets of ideas have been added. First are those associated with centralized federal government and nationalism. Second are those of the developing technological revolution, with its fountainhead in Britain. The latter ideas include steel, steam power, the railroad, scientific breeding of plants and animals, fertilization and rotation in agriculture, factory production, and increased specialization in production and trade.

The new ideas are being applied to expanded and newly appraised resources. Settlement, canals and the new steel plow are striding across the Old Northwest and approaching the prairies, whose unparalleled resource significance is only beginning to be realized. The new ideas are beckoning Pennsylvania anthracite to new factories in seaboard cities.

The diversified economy is growing in size, wealth and regional specialization. Along an axis from Boston to Baltimore there is developing an urban and industrial core where trade and manufacturing are becoming dominant over farming, forestry and fishing. This core area has begun to perform economic and cultural services not only for the developed East but also for the newly developing West, the Old South, and the West Indies.

The Economic Core Region Today

Let us skip another century and bring to date our brief outline of people, time, space, and ideas in the urban and industrial core region of Anglo-America (Fig. 3).

The people have, in these last hundred years, multiplied more than fivefold. Much of the increment is the result of immigration, from the old sources in northern and western Europe and from new sources in southern and eastern Europe, the American South, and the West Indies. Migrants, both colored and white, continue to flow from the last two areas. The influx of political refugees from Europe during the last two decades has added ideas and skills out of proportion to their number.

The ideas are mainly the old ones, further developed and more widely, though more discriminately, applied. An increasingly numerous and complex society has required that old ideas of individual ingenuity and independence of action be modified by institutionally-con-

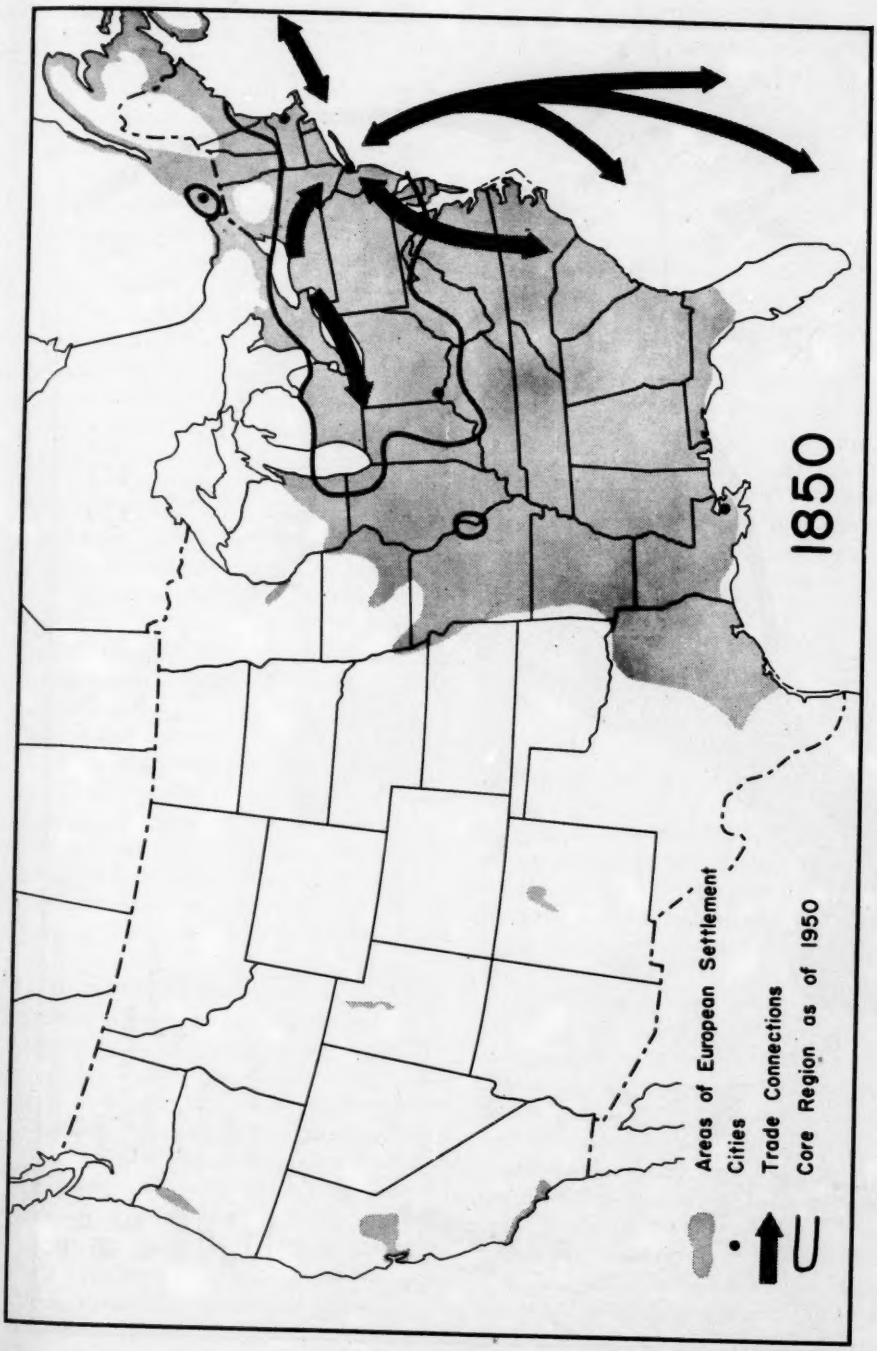

FIG. 2. Development of the Economic Core Region, 1850.

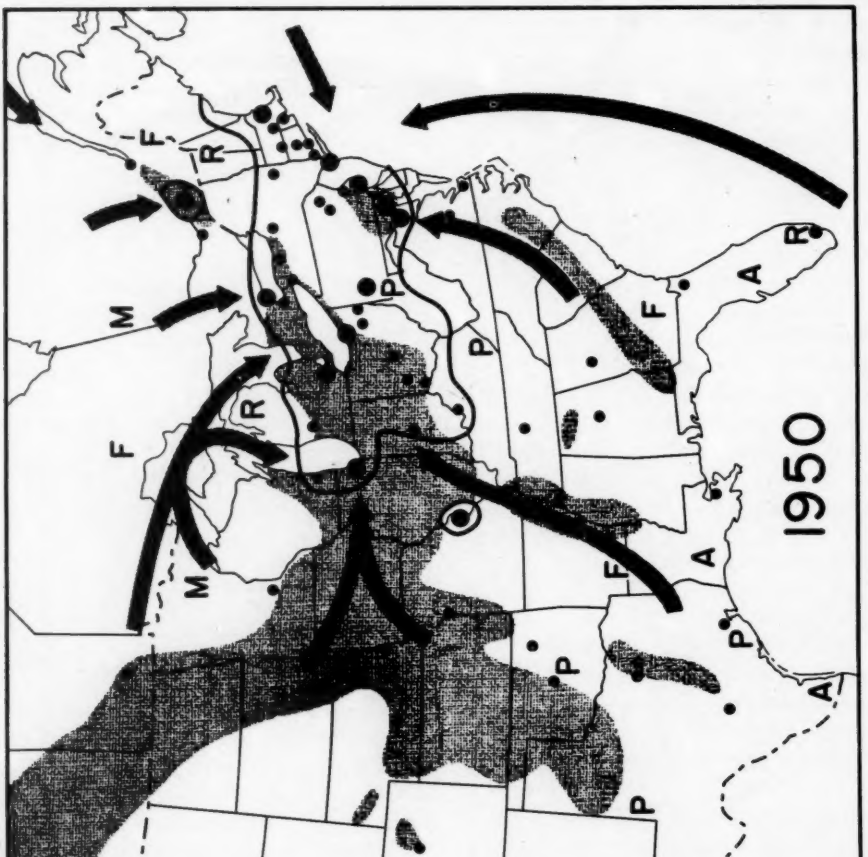

FIG. 3. Areal-Functional Relationships of the Economic Core Region, 1950.

trolled concern for the many. The economic core region of Anglo-America and its mother industrial region at the opposite end of the North Atlantic highway have together become the larger core and fountainhead of the ever-expanding technological revolution. The ideas of the latter, applied to new resources annexed from all the earth, have given rise in the American region to the new, dominant idea of technical progress toward plenty.

The economic core region has expanded in space to include much of the unparalleled coal resource of the western Appalachians and much of the fabulous soil resource of the eastern Midwest, the whole welded together by east-west trunkline routes of rail, highway and air. Even more startling is that the communication tentacles of the urban and industrial East have reached far beyond its boundaries to annex, fabricate and consume the resources of other regions—the agricultural productivity of the western Midwest, the forests and minerals of the upper Great Lakes and Canadian North, the petroleum and natural gas of the near Southwest, the winter fruit and vegetable-producing capacity of the Gulf Coast and far Southwest, the summer breezes of the North and the winter sunshine of Florida. Indeed, resources from all segments of earth space have been annexed by this small, unique segment in eastern North America.

It continues to grow within and to expand without, by contiguous spread, by development of outliers, and by remote control. It comprises the third major cluster of world population, after southern and eastern Asia and Europe. Nearly half the people of the United States, and of Canada, live here. No other like-sized group of people in the world produces and consumes so much; none other has thus far been so fully endowed with such a unique combination of space, or resources, and ideas.

The Current Structure

What is the current structure, the areal-functional organization, of this unique urban and industrial East? It is comprised of two spatially-intermingled but functionally-separate parts: cities and rural service areas.

The cities, 12 with over a million people in 1950, and nearly two dozen others with more than a quarter-million, serve as makers, traders and shippers of goods, bankers, insurers and advertisers, business managers, educators and entertainers. These functions are performed for the millions who live in the cities themselves, for the whole region, for the two nations which share it, for the functionally-annexed areas, for the world. Never before in Earth time or space have functions so specialized and far reaching been concentrated in quantities so large, in spaces so small but significant.

Problems result. There are problems: (1) of traffic—increasing quantities of people, goods and vehicles attempting to move in restricted spaces; (2) of supply—millions of people removed from direct sources of food, water and fuel; (3) of waste removal (how do these extravagant consumers of elaborately packaged goods escape being buried under their own debris?); (4) of obsolescence of unplanned arteries and architecture, especially in old city centers; (5) of orderly growth as the city spreads, fragments, and specializes its functions in space; and (6) of social amalgamation and government as successive foreign groups occupy the city center, acquire wealth and education, and escape to the suburbs. In turn each escaping group leaves the next poorer and less educated group to solve the problems of congestion and obsolescence at the center.

Each urban center is unique. New York was most successsful in attaching the Midwest to its hinterland and in annexing the resources of remote areas so

FIG. 3. Areal-Functional Relationships of the Economic Core Region, 1950.

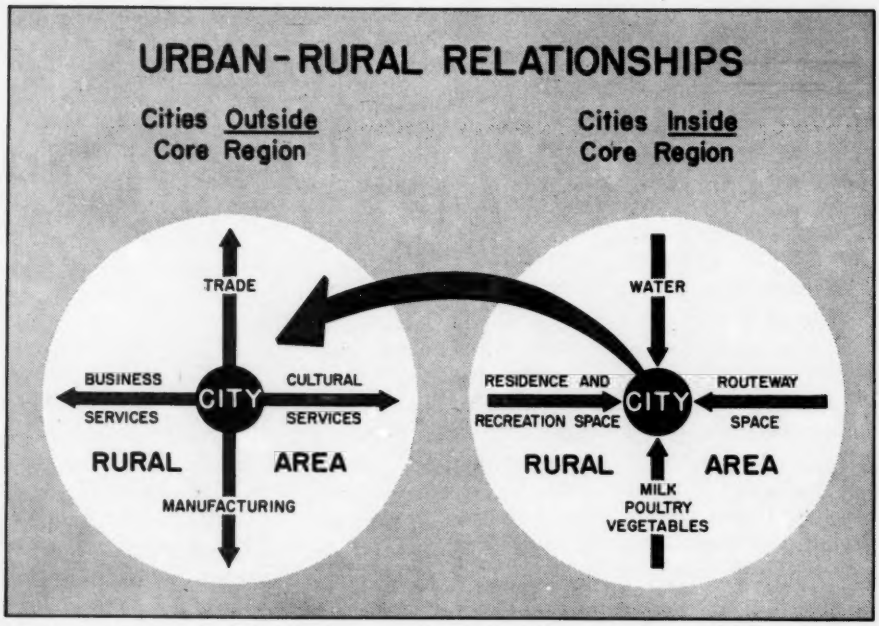

FIG. 4.

as to become, to an amazing degree, front door for America and business manager for the world. Montreal and the Boston-to-Washington megalopolis share with New York the front-door function. Chicago, supreme trader, shipper and processor for the Midwest, now threatens partially to by-pass the front-door cities with its own improved connections to the North Atlantic highway and the world. From the workshops of Detroit, Pittsburgh and scores of smaller and even more specialized cities flow fabricated goods in seemingly limitless quantity. Each urban center invites analysis in the classroom of its areal and functional relationships to the region and to the world.

The cities originated as centers of service for surrounding rural areas. This is still the normal relationship in much of the world (Fig. 4, left). It largely explains, for example, the existence and functions of cities such as Nashville, Tennessee, or Des Moines, Iowa. But in the eastern core region, the functional relationship is reversed (Fig. 4, right). Here, the great cities serve not their surrounding areas but remote ones. Here, instead, the surrounding rural areas serve the cities.

First, the rural areas provide earth resources. These include the plentiful coal and more limited oil, gas, salts and ores of the Appalacians and eastern Midwest. They include the materials for the endless expanses of pavement, brick and building stone. They include the power from hydroelectric sites and the products from forest and sea. For most of these, the rural areas of the East provide too little; the urban centers have reached beyond the core region to annex similar, more remote, resources. The earth resource for which the cities depend most exclusively and critically upon their surrounding areas is water. No areal-functional relationship is more essential than that between New York City or Phila-

delphia on the one hand and the water catchment areas of the Catskills on the other.

Second, the urban centers depend upon their surrounding rural areas for agricultural specialties that can be supplied most efficiently from nearby. This areal-functional relationship has brought a rejuvenation of Northeastern agriculture, specializing primarily in poultry and fluid milk products and secondarily in summer vegetables and fruits. Again, much of the urban appetite, and even much of the feed for livestock, must be supplied from outside areas.

Third, the rural areas provide space for residence and recreation. In the economic core region, most rural people are not farm people. They are commuters to the city, by the day, the week or the season. In 1950 less than one-sixth of the people of Massachusetts were classified as rural. But even of these relatively few rural people, less than one in seven was a farm resident. The other six out of seven were residentially rural, but functionally urban.

Many more, indeed most, of the urban people use the rural areas as space for recreation. Like the commuters in the opposite direction, they may go to the country for the day, the week or the season. In the nineteenth century, the steep slopes of the Appalachian hills and the barren soils of the upper Great Lakes seemed a handicap. In the twentieth century, they are a blessing, a resource perhaps as significant to the urban millions as West Virginia coal or Illinois prairies.

Finally, the rural areas provide space for routeways between the cities. The actual space occupied by waterways, railways, highways, airways, message-ways, pipelines and their improvements and terminals has only recently become relatively major in itself. But in significance, this function of the rural area is vital. It makes possible the operation of the areal-functional organization which makes this region unique in Anglo-America and the world.

Summary

We have hurriedly attempted to demonstrate, in outline only, the application of a fundamental series of concepts to a highly significant and complex area. We may have revealed little that is not obvious to the trained geographer. On the other hand, I strongly fear that tens of thousands of young citizens, soon to be charged with the responsibilities of world leadership, will, in a few weeks, end their four to five years spent in American geography classrooms, never to enter another, with little or no comprehension of the concepts we have just discussed. I fear that they may be full of facts and figures about places, but will never understand the geographic structure of the American economy and society and its basis in people, time, space, and ideas. I hope that I am wrong.

THE LAST JOURNEY OF MELCHIOR DIAZ

RONALD L. IVES
Palo Alto, California

CALIFORNIA, "the earthly paradise on the right hand of the Indes," was commonly regarded as an island, separated from the mainland of North America, until about 1700. At that time the published maps of Eusebio Francisco Kino, S.J., the famed "Apostle to the Pimes," confirmed earlier reports (summarized in the maps of Adam Aigenler) that it was actually a part of the continent and not an island.

The first overland journey from New

Spain, now a part of Mexico, to California was made in 1540 and 1541, as a part of the Coronado Expedition. Leader of the expedition was Melchior Diaz, one of Coronado's ablest and most trusted captains. He is described in the ancient documents as "A captain who had been Elcalde Mayor of Culiacan, who, although he was not a gentleman, merited the position he held." This should not be interpreted to mean that he chewed tobacco and ate dinner in his undershirt, but that he was not of noble birth, and had attained his captaincy by rising from the ranks, a most difficult accomplishment in those latter days of chivalry.

At the time of the expedition, Melchior Diaz was commandant of Coronado's camp in the Valley of Hearts on the Rio de Sonora, not far from the present town of Ures in the state of Sonora, Mexico. In mid-September of 1540, Diaz received orders from Coronado to go westward to the sea and there to contact the expedition under Hernando de Alarcon, who was supposed to deliver several boatloads of supplies. Late in September, after turning over his command at Corazones (Hearts) to Diego de Alcaraz, a former slave hunter and "a man unfit to have others under his command," Diaz set out for the northwest, accompanied by 25 of the best soldiers from the Corazones garrison, an unspecified number of Indian aids, and a flock of sheep to supply fresh meat en route.

Diaz' Itinerary

Although the ancient narratives do not give a day-by-day account of Diaz' itinerary, the route followed was almost certainly the ancient Indian trail from central Sonora to the Colorado, still known in some parts as the "Camino del Diablo." This is the only route along which could be found enough water to insure the survival of a party of 25 men on horseback, with Indian companions trotting along afoot, and driving a flock of sheep. A reconstruction of this trail comprises Fig. 1, and was the trail followed by most travelers from New Spain to California until the beginning of this century. Because Diaz was a competent desert traveler, having made several previous journeys on horseback from Corazones to north of the present site of Benson, Arizona, the march from Corazones to and through the Magdalena Valley and then across the deserts to the Gila Valley was so routine that no comment was made about either the terrain or the inhabitants.

A short distance before reaching the present Yuma area, however, something worthy of comment was seen. Here, the Spanish soldiers made their first contact with the "giant" Yuma Indians, then, as now, noted for their extreme strength. The Diaz party noted, for the first time in history, the Yuma custom of carrying a burning torch to keep warm in winter and from this custom named the great river along which these Indians lived the Firebrand River ("Rio de Tizon").

From this description of the Indians and their customs, we can be sure that Diaz came out of the desert somewhere between the present site of Wellton, Arizona, and the mouth of the Colorado. As Wellton is on the main Indian trail and since use of any other route would be improbable because of sand dunes, which would surely be mentioned in the accounts, we can be reasonably sure that Diaz approached the Yuma plain via the northern end of the Gila Range.

Misses Connection

Near the present site of Yuma, Arizona, the captain learned, through an interpreter, that the ships of the Alarcon expedition had come up the river to a point only three days' journey to the south. Thence they went and found inscribed on a tree the sign "Alarcon came

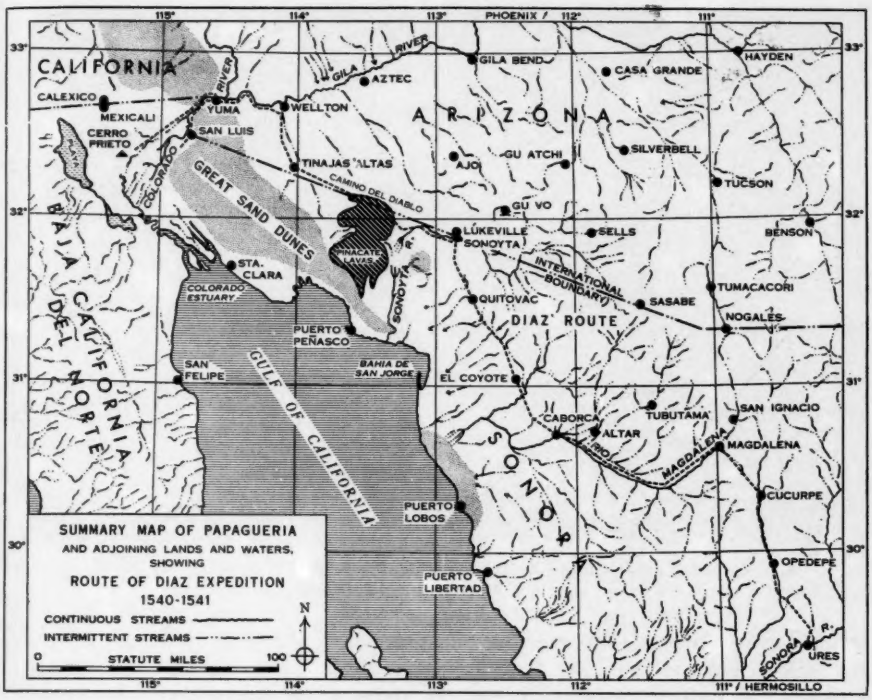

FIG. 1. Map showing approximate route of Diaz expedition.

this far; there are letters at the foot of this tree." After digging up the letters, they learned that Alarcon had returned to New Spain because his ships could go no farther and that the Isle of Marquis, "which is called California," was not an island but a part of the mainland. This return of the sea expedition left not only the main Coronado party, but also the Diaz expedition, without the promised, and badly-needed, supplies.

From the marked tree, which may have been on the east side of a now-abandoned channel of the Colorado a short distance below the present site of San Luis, Sonora, Diaz travelled northward upriver until he found a place where a crossing on rafts might be possible. With Indian aid, the rafts were built "with much diligence and speed." It seems that the crafty Yumas hoped to divide the party while they were crossing the river, overturn the rafts and drown the passengers and then attack those on shore.

This conspiracy didn't work very well. One of the soldiers saw some suspicious Indian "troop movements" and reported the matter to his captain. An Indian was secretly captured, and, after suitable questioning under torture, revealed the whole plot. The informant was "tossed into the river that night with a weight in order that the Indians should not know that they were suspected." The next morning, the Yumas attacked, "shooting showers of arrows," which had little effect on armored soldiers who retaliated with lances and harquebus shots, driving the Indians to the mountains "until not a man was to be seen." These were probably the western outliers of the Gila (Fortuna) Range, a few miles west of the

FIG. 2. A part of the mud volcano field at Volcano Lake, Baja California del Norte, Mexico. Hill at right is a shoulder of Cerro Prieto, a recently-extinct volcano.

present Yuma Airport. The crossing of the Colorado that afternoon was uneventful, "the Indian allies and the Spaniards crossing on the rafts by turns, and the horses swimming alongside."

On the west side of the Colorado, the party went southwestward in search of the western shore of the Gulf of California. On this route they shortly came upon "some beds of burning lava. No one could cross them, as it would be like going into the sea to drown. The ground which the Spaniards walked on resounded like a kettle-drum, as if there were lakes underneath. It was amazing to see the cinders boil in some place, for it looked like something infernal. They turned away from this place—."

The place that "seemed like something infernal" is still there and is now known as Volcano Lake (Fig. 2, Fig. 3), a shallow mudhole covering about 50 square miles of delta land at the southeast base of Cerro Prieto, a recently-extinct volcano in the Mexican state of Baja California del Norte about 20 miles southeast of Mexicali.

Here, today, hot volcanic mud bubbles up from below; foul gases pollute the desert air; and thin crusts of turf and salty clay cover hot pools of mud and water only a few inches below the surface, so that a man can walk on them, but a horse cannot. Thickness of the deposits, and other geological evidence, indicates that activity here has continued for a long time, probably for much longer than the 400-odd years since Diaz' visit in 1540.

Diaz' route from the Yuma area can be determined with little difficulty and with considerable certainty, for there is only one narrow strip of firm ground joining Yuma and Volcano Lake. It is now the route of the Southern Pacific Railroad and the Volcano Lake levees (Fig. 3). North of this firm ground are the sand dunes of the Colorado River Desert, over which a plank road was built in stagecoach days, while most of the land to the

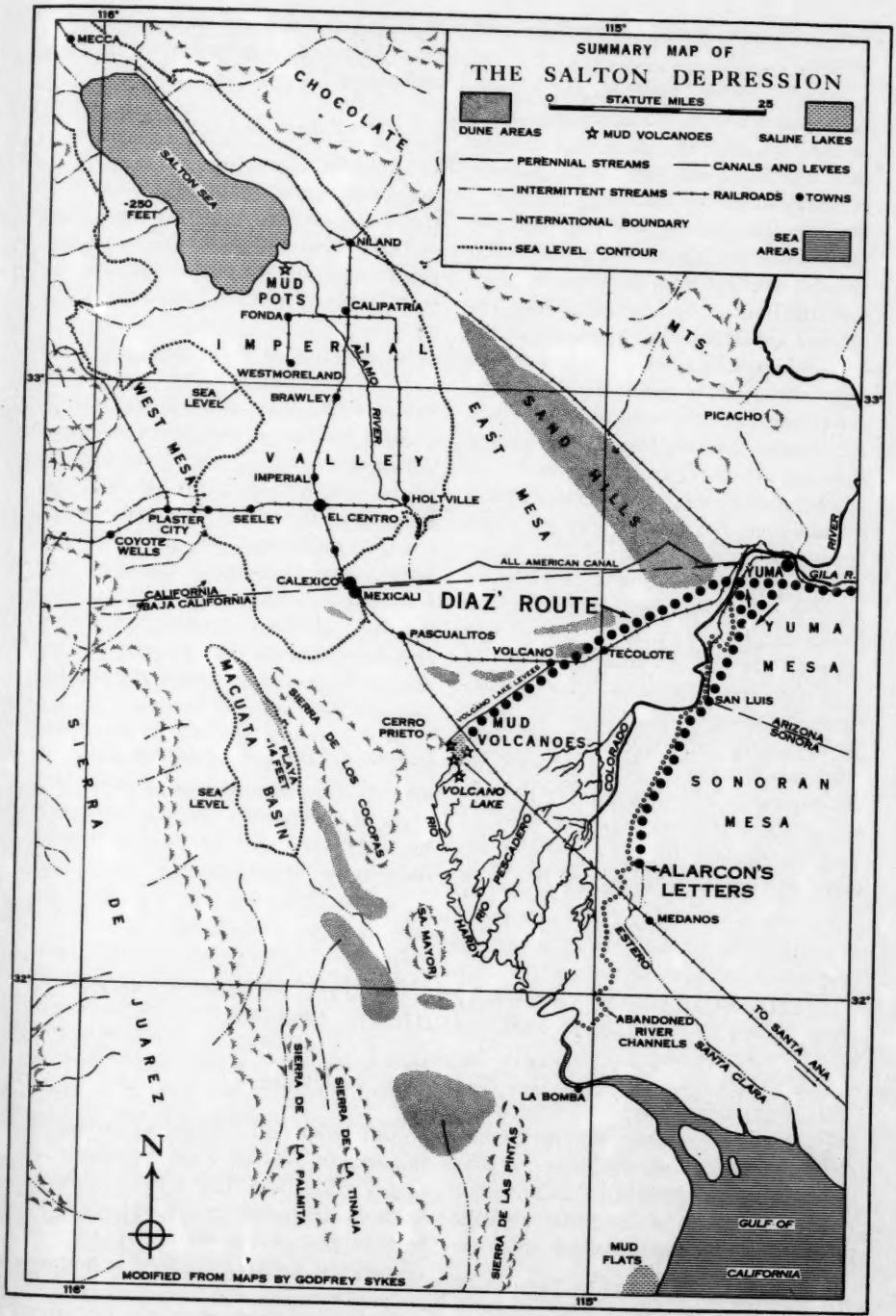

FIG. 3. Reconstruction of Diaz' routes in the Yuma area.

south and southeast is a brush-covered morass.

Diaz' Accident

Five or six days out of Yuma, which would be about two days after leaving the mud volcanoes, Diaz rode in pursuit of a dog which was harassing the sheep. He cast his lance at the dog, and the lance stuck upright in the ground. Unable to turn his horse in time, he overrode the butt of the lance, receiving serious abdominal injuries. At this point, the expedition turned back, the men carrying their leader, probably in a litter, and the return to Sonora began with the hostile Yumas attacking the party daily and shooting arrows at it from ambush.

The site of Diaz' accident was almost certainly on the hard gravel plain between the present town of Pascualitos and the base of the Sierra de los Cocopas, for there is no firm ground over which horses can be ridden in any other area immediately west of Cerro Prieto.

Despite the rigors of a litter journey through the desert, Diaz lived for about 20 days, and "although the men travelled rapidly with the desire to reach the settlements in time for him to be confessed, for there was a priest there, he died on January 18, 1541, and the soldiers with great sorrow buried him on a little hill and there erected a cross, covering him with a large mound of earth and stones."

Return to Corazones

After Diaz' death, the party made its way back to Corazones with no further casualties, and the unhappy news, both of Diaz' death and of the failure to contact the supply ships, was communicated by courier to Francisco Vasquez de Coronado.

In addition to the leader, Melchior Diaz, history has preserved for us the names of two of his soldiers—Hernano de Orduña, of Burgos; and Pedro de Castro. These two soldiers were apparently the messengers who carried the unhappy news from Carozones to Cibola, where Coronado was; and it is probably from their narrative accounts that Pedro de Castañeda of Najera prepared his famous narrative of the Coronado Expedition; and an unknown author, perhaps Hernando de Alvarado, wrote the equally valuable Relacion del Suceso.

On his return to New Spain, Coronado, who was as intensely loyal to his men as they were to him, granted Melchior Diaz' daughter, who was apparently his only survivor, the income from a town in lieu of pension.

THE STATUS OF GEOGRAPHY IN THE PUBLIC JUNIOR COLLEGES OF MICHIGAN, 1957-1958*

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WITHIN recent years the junior college[1] has become an important part of higher education in the United States. Enrollment increases in Michigan's public junior colleges indicate that this type of institution is becoming of increasing importance in the State's program of higher education. The fall enrollments in these institutions increased from 8,102 in 1953, to 19,837 in 1957, and the overall increase during this period amounted

* The writer is indebted to Dr. Lawrence M. Sommers, Head, Department of Geography, Michigan State University for his helpful suggestions and interest concerning this paper

[1] The terms "junior college" and "community college" are used synonomously in this paper. In Michigan, these institutions are legally designated by the legislature as "community colleges."

to 144 per cent. During this same period, the State colleges and universities increased their enrollments from 59,902 to 83,544 or 39 per cent.[2]

Many people appear to have misconceptions of the problems, functions, and position of the junior college in higher education. The objectives of this paper are: (1) to describe the status of one discipline, that of geography in the public junior colleges of Michigan and (2) to serve as a tool of comparison so that the status of geography in junior colleges in other parts of the United States might be better analyzed and improved.

The data on public junior colleges contained in this paper were primarily obtained from a questionnaire which was sent to 15 public junior colleges of Michigan in the Spring of 1958. Additional sources of information were the current catalogs of each of the junior colleges and the *Directory of College Geography*.[3] The latter source was particularly valuable for information on the State colleges and universities.

Publicly Supported Higher Education

In 1958 there were 24 publicly supported institutions of higher education in Michigan (Figs. 1 and 2). Fifteen of these were junior colleges and the remaining nine were State colleges or universities. In addition to these 24 institutions, "The Survey of Higher Education in Michigan" has suggested 20 proposed locations for future junior college sites.[4]

Figures 1 and 2, indicate that the locations of the junior colleges correlate better with the population of Michigan than do the State colleges and universities. Most of the State college and university locations were compromises between the population conditions of the State and the accessibility of these locations at the time each institution was established. The majority of the junior colleges were established after the State institutions. Public junior colleges are usually organized only when a community, county, or counties determine the need for and the ability to finance such an institution. Junior colleges are more numerous in the larger communities and counties of southeastern Michigan, and, therefore, conform to the over-all population density and urban patterns of the State.

Geography Enrollments

A comparison of the function of the public junior colleges and the State colleges and universities in teaching introductory, economic, and regional courses revealed the comparative status of the two groups in this phase of geographic education (Fig. 3). The public junior colleges were quite significant in the over-all picture of geography in Michigan's publicly supported institutions of higher education, for they accounted for 2,343 of the 12,753 enrollments listed in Table 1, or approximately one-sixth of the total. It should be noted that the largest percentage of Michigan's geography enrollment was in those colleges and universities in the most densely populated part of the State.

Twelve of the State's 15 public junior colleges offered geography during the 1957-1958 academic year. Of the 12 colleges, two offered one course each, three offered two, three offered three, and four offered four or more geography courses (Table 2). The colleges with the largest offerings were also the ones with the largest geography and total enrollments.

Geography Course Offerings

Seven distinct content categories exist in the geography offerings of the public

[2] "Your Community Colleges," A report of the Michigan Council of Community College Administrators, April, 1959.

[3] J. R. Schwendeman. *Directory of College Geography of The United States: Academic year 1957-1958*. University of Kentucky, Lexington, 1958.

[4] S. V. Martorana, *The Community College in Michigan*, Staff Study No. 1, "The Survey of Higher Education in Michigan," Lansing, 1957, 120-128.

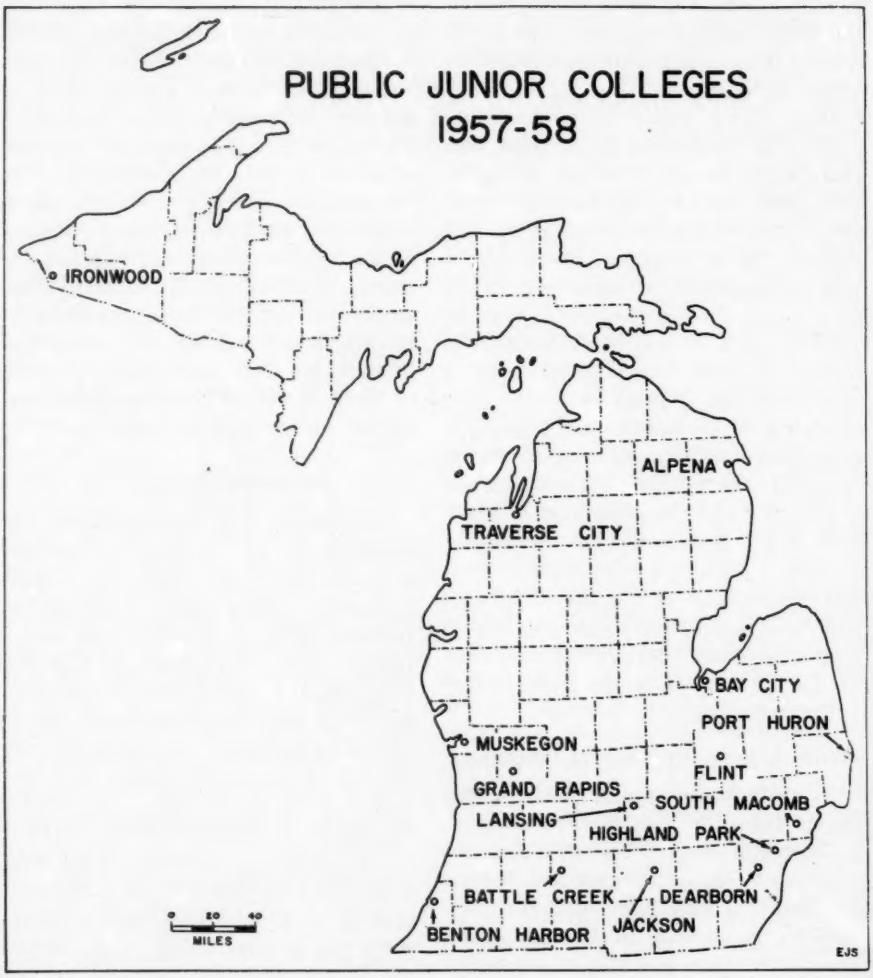


FIG. 1

junior colleges of Michigan. Table 3 lists the categories and the enrollment in each. The most prominent courses in the largest number of colleges, as well as those with the largest enrollments, were Physical Geography, World Regional Geography, and Economic Geography. The combined enrollments of these courses amounted to 2,203 or over 90 per cent of the total junior college geography enrollment of 2,343. A similar situation was found by Kramer[5] in his study of "Geography in California Junior Colleges."

It is interesting to observe that such courses as: Geography of Michigan, Anglo-America, Europe, and Geography For Teachers are offered in some of the junior colleges. The junior colleges offering these courses have geographers on their staffs and the largest geography enrollments. These facts indicate the importance of hiring geographers if a college program in geography is expected to develop and expand.

[5] Fritz L. Kramer, "Geography in California Junior Colleges," *The Journal of Geography*, 55 (October, 1956), 345.

FIG. 2

Instructor Training and Experience

In the spring of 1958, there were 18 persons teaching geography in the public junior colleges—15 men and three women. The number of instructors[6] varied from four in one college to one in nine of the colleges.

The returned questionnaires indicated that the academic training in geography for some of the instructors was not adequate. Only 11 of the 18 instructors had graduate majors. The others had majored in either Geology, History, Business Administration, Elementary Education, or Social Studies. Several of the colleges have small enrollments which make it necessary for some instructors to divide their time by teaching in other disciplines or carrying on administrative duties.

Only two of the 18 instructors held the doctorate in geography while the other 16 had the master's degree. Possible rea-

[6] Teaching personnel in junior colleges are usually referred to as "instructors" because systems of academic rank rarely exist.

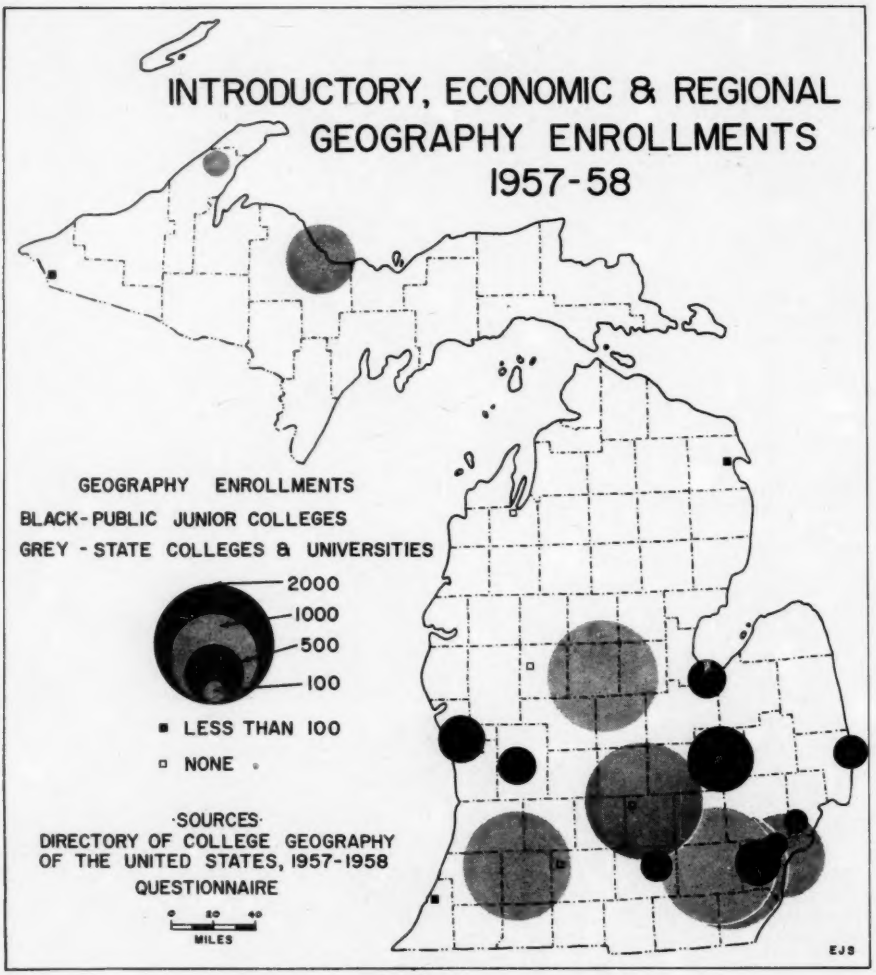


FIG. 3

sons for the lack of Ph.D. trained personnel are: (1) research minded geographers find little attraction to junior colleges because teaching loads average 15 semester hours and administrators do not generally encourage their staff to carry on research projects,[7] (2) the Department of Public Instruction's regulations regarding teacher certification. A minimum of 15 semester hours of professional education courses are required for the Permanent Junior College Teaching Certificate. Salaries cannot be offered as a reason for the lack of personnel, for several of the junior colleges have salary schedules that are comparable to other colleges and universities in the State.

Ten different colleges and universities have conferred graduate degrees on the 18 geography instructors (Table 4).

[7] Flint Community Junior College has established a Research Fund to encourage its faculty to do research work so that individual professional standing as well as that of the college is improved. The faculty and administration agree that this has been a great stimulus to research and the recruitment of new faculty.

TABLE 1

GEOGRAPHY ENROLLMENTS IN MICHIGAN'S PUBLICLY SUPPORTED COLLEGES AND UNIVERSITIES, 1957-1958

	Introductory‡	*Regional*§
State Colleges and Universities•		
University of Michigan	962	1,045
Eastern Michigan College	1,138	778
Michigan State University	1,426	261
Western Michigan University	1,356	243
Central Michigan College	1,230	339
Wayne State University	664	305
Northern Michigan College	475	61
Michigan College of Mining & Technology	72	55
Ferris Institute	—	—
Totals	7,323	3,087
Public Junior Colleges†		
Flint Community Junior College	550	10
Muskegon Community College	270	40
Dearborn (Henry Ford Community College)	200	80
Grand Rapids Junior College	225	—
Bay City Junior College	221	—
Port Huron Junior College	209	—
Jackson Junior College	182	—
South Macomb Community College	125	—
Highland Park Junior College	108	10
Benton Harbor Community College	65	—
Ironwood (Gogebic Community College)	25	—
Alpena Community College	23	—
Battle Creek Community College	—	—
Lansing (Capital Community College)	—	—
Traverse City (Northwestern Michigan College)	—	—
Totals	2,203	140
Grand Total	12,753	

• Data from *Directory of College Geography*
† Data from Questionnaires
‡ Includes Physical, Economic, and World Regional
§ Includes Undergraduate Regional and Specialized Courses

Eleven of the 18 instructors received their graduate training at Michigan colleges and universities. No section of the State can be identified as having all "Michigan" or all "non-Michigan" geography instructors. There is a tendency, however, for more "non-Michigan" instructors to be located in colleges in the southern half of the State.

The questionnaire revealed that the teaching experience of the instructors varied from one to 36 years with an overall average of 15.9 years of experience per instructor. No attempt was made to differentiate between elementary, high school, or college levels of experience.

From the available information, it appears that several of the junior colleges will have geography vacancies in the near future since eight of the instructors have 20 or more years of experience and of these, four have 30 or more years.

Conclusions

The present status of geography in the public junior colleges of Michigan

TABLE 2

NUMBER OF GEOGRAPHY COURSES AND GEOGRAPHY ENROLLMENTS,* 1957-1958

Colleges	Number of Courses	Total Geography Enrollments
Flint	5	560
Muskegon	4	310
Dearborn	4	280
Grand Rapids	3	225
Bay City	4	221
Port Huron	2	209
Jackson	2	182
South Macomb	3	125
Highland Park	3	118
Benton Harbor	2	65
Ironwood	1	25
Alpena	1	23
Battle Creek	0	0
Lansing	0	0
Traverse City	0	0
Totals	34	2,343

* Data from catalogs and questionnnaires.

clearly indicates that these colleges play a significant role in geographic education. In addition, it might be assumed that their combined relative position will be maintained in the future. A continuation of interest in the development of public junior colleges in Michigan could positively affect the future status of geography.

TABLE 3

JUNIOR COLLEGE GEOGRAPHY COURSES AND ENROLLMENTS, 1957-1958

Courses	Number of Colleges	Enrollments
Physical Geography*	9	1,152
Economic Geography	8	634
World Regional Geography†	6	417
Geography of Anglo-America	2	30
Geography of Michigan	2	50
Geography of Europe	1	20
Geography for Teachers	1	40
Total		2,343

* Includes Elements of Geography.
† Includes Human Geography.

TABLE 4

INSTITUTIONS CONFERRING GRADUATE DEGREES

Institutions	Ph.D.	M.A. or M.S.
University of Michigan		7
Wayne State University		3
Columbia University		1
Eastern Michigan College		1
Harvard University		1
Illinois State Normal University		1
Indiana University	1	
Oberlin College		1
University of Cincinnati		1
University of Copenhagen	1	
Totals	2	16

Geographers need to realize that the junior college is a growing force in higher education and also need to be willing to accept the responsibility and challenge which it offers. This force should not be interpreted as a threat to the geography departments in the state colleges and universities. Increasing junior college geography enrollments will actually aid these departments in their recruitment of potential students who will "major in geography."

In conclusion, the writer suggests the following proposals which geographers might follow in helping to improve the general status of geography in the junior colleges of the United States:

A. Inform graduate students of junior college teaching opportunities.
B. Encourage junior college administrators to hire geographers.
C. Become acquainted with the problems of teaching geography in junior colleges.
D. Enlist the support and membership of junior college geography instructors in professional organizations.
E. Co-operate with junior college geographers in joint research projects and curriculum studies to improve the effectiveness and status of geography in higher education.

DAILY WEATHER MAPS AS ILLUSTRATIONS OF WEATHER TYPES: PART TWO*

JACK RICHARD VILLMOW
The Ohio State University**

DURING the later stages of the Second World War, American pilots, flying from their bases in the Western Pacific toward bombing sites over Japanese controlled territory, found themselves in the awesome predicament of trying to fly forward into a stream of air which was moving in the opposite direction with a force equal to their own forward air speed! Although this event can easily be described as the first significant encounter with that mysterious concentration of high speed air flow embedded in the three dimensional envelope which we call our atmosphere, it should be understood that this adventure of the pilots was not the first recognition of the Jet Stream. As far back as 1933 a narrow band of high velocity winds in the upper westerlies had been described by V. Bjerknes, Norwegian pioneer in meteorological concepts, in *Physikalische Hydrodynamik*. Although 25 years have passed since we first became aware of the Jet Stream, we are still far from being able to completely describe, much less explain, this phenomenon. Over a decade passed from the first detection of the Jet Stream to the first meaningful encounter with it. Since the close of the Second World War, when we first encountered the Jet Stream, observations have been spotty, irregular, and haphazard. Certainly a prime factor preventing systematized observations has been the location of the Jet Stream, which is entirely above the surface of the earth embedded in the lower atmosphere and which varies in both its precise altitude as well as latitude.

That the Jet Stream is important in describing and explaining surface weather phenomena appears indisputable. The degree to which it is important as a causal factor is disputable and will remain so until the Jet Stream is more fully understood. Let us examine a recent series of maps which illustrate some of the relationships between surface conditions and jet flow.

Surface Conditions

The surface *Daily Weather Map* during the period January 18-22 illustrated these major characteristics (See Figs. 1-5):

(1) a conflict between a rapidly expanding Polar High (P.H.) over northwestern Canada and a gradually strengthening Subtropical High (S.T.H.) over the southeastern edge of the United States;

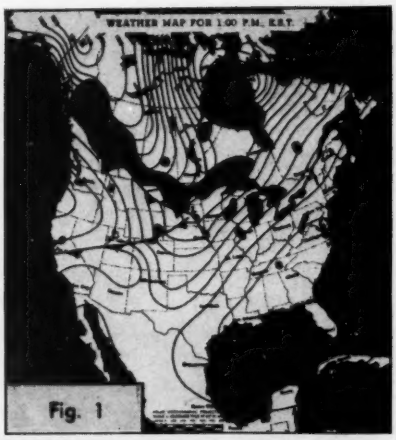
(2) the evolution of a marked frontal

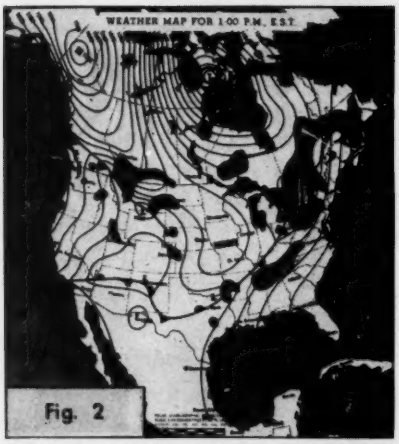
* A research grant from the National Council for Geographic Education enabled the writer to undertake this study.

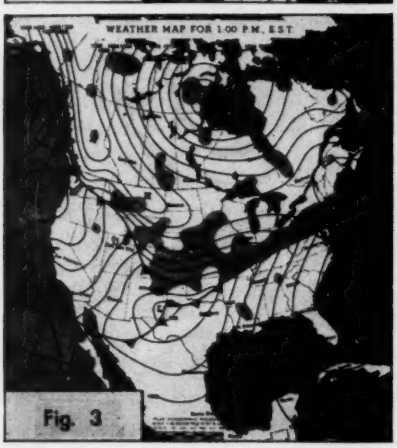
** The writer is currently on leave from The Ohio State University and is Visiting Lecturer in Geography at Clark University, Wellesley College, and Boston University, and Visitor at the Harvard Russian Center.

January	Polar High	Subpolar Low	Middle Latitude Cyclone	Subtropical High
18	1040	972	—	1024
19	1052	972	—	1028
20	1036	992	996	1028
21	1040	1008	992	1024
22	1036	968*	968*	—

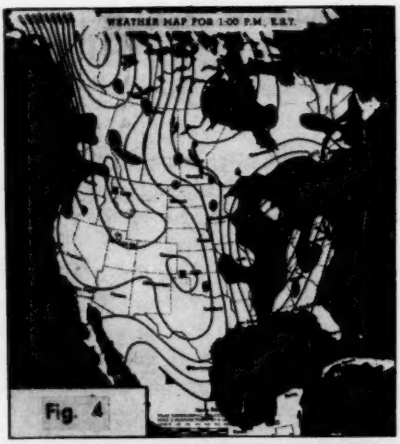
* The storm was absorbed by, or merged with, the Subpolar Low on January 22.

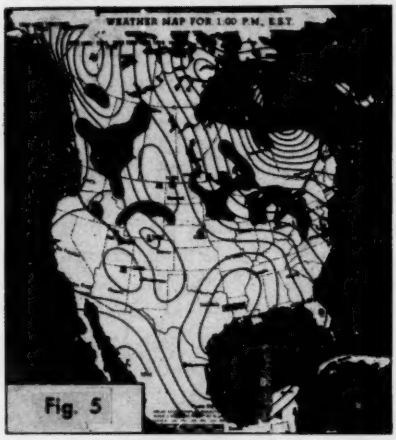






FIGS. 1-3





FIGS. 4-6

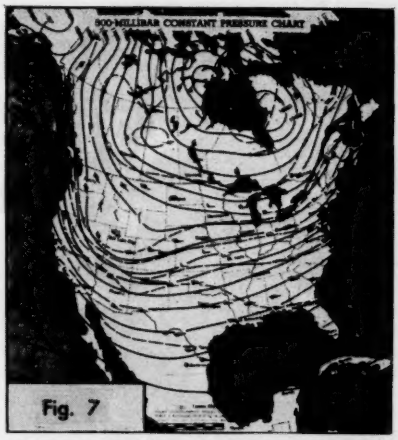
zone between these strongly contrasting air masses, followed by the development at the surface of an unusually intense middle latitude cyclone;

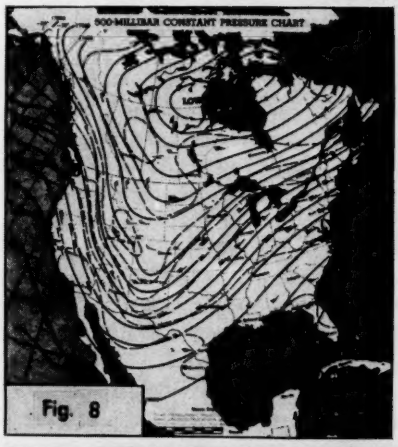
(3) the persistence of a Subpolar Low (S.P.L.) center near Hudson Bay which weakened during the early stages of conflict between the Polar High and the Subtropical High but was later reinforced by absorption of, or replacement by, the middle latitude cyclone which generated along the frontal zone.

The following table indicates the pressure value in millibars near the centers of the principal pressure systems over North America.

Jet Stream Conditions

Upper air flow during this period of intense storm development and rapid movement of pressure systems is illustrated in Figs. 6-10. On January 18, Jet flow at the 500-Millibar level is not particularly well defined over the continent; upper air flow is generally from the west or west-northwest moving at a moderate velocity. By January 19, after the surface Polar High had expanded and developed rapidly and the Subtropical High had grown slightly, a well defined Jet flow became apparent, moving southward along the Pacific Coast, then curving approximately eastward and northeastward over the central portion of the United States. By January 20 a marked trough appeared in the Jet flow over the southwestern part of the United States. *Simultaneously a vigorous cyclonic development occurred at the surface near the southern end of the trough, concurrent with the establishment of a well-defined surface front.* By January 21 the trough in the upper air Jet flow had swung eastward and downstream to a position near the Mississippi Valley. To the west of this trough Jet flow moving from northwestern Canada accelerated the southward





FIGS. 7-9

FIG. 10

plunge of fresh Polar air and to the east of this trough the northward moving Jet Stream drew immense quantities of warm moist air over the eastern section of the United States, where flood conditions prevailed from Iowa to Pennsylvania. Meanwhile the rapidly deepening surface low was moving in the direction of the major flow aloft, eventually joining the Subpolar Low over Hudson Bay on January 22, and the axis of the upper air trough continued moving eastward while the curvature of the southern end of this trough became far less marked.

Conclusions About Jet Stream Flow

Several conclusions may be drawn from these and similar observations of the Jet Stream on Daily Weather Maps.

1) Surface cyclonic pressure areas tend to develop and move in accordance with mean flow of upper air Jets.
2) Precipitation at the surface is located along a band downstream from a well-marked trough in the Jet.
3) Jet flow is stronger in winter than in summer.
4) The Jet Stream moves approximately west to east, varying considerably through successive stages of meandering.
5) The Jet Stream is located farther north in summer—near the Canadian border—than in winter, when its latitudinal oscillations are particularly noticeable.
6) Although easily discerned on the 500-Millibar Constant Pressure Chart—moving parallel to the contour lines and proportional in velocity to the closeness of these contour lines—the core of the Jet is best marked on the 300-Millibar Chart in winter and on the 200-Millibar chart in summer.
7) Air movement in the Jet ranges up to 300 miles per hour, varies considerably in its downstream velocity, has a marked velocity gradient at right angles to its flow, and is anywhere from 350 to 750 miles in width.

RECENT DEVELOPMENTS IN THE NORWEGIAN METALS INDUSTRIES

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Sacramento State College

THE INDUSTRIAL development of Norway since the origins of the factory system in the mid-19th century, based on fisheries, timber, hydroelectric power, and minerals, has been greater than is usually realized. In this sparsely settled land of only 3.5 million with less than 3 per cent arable, about 30 per cent of the population is now engaged in mining and manufacturing. The recent rapid in-

crease in industrialization has been necessary in order to augment income derived from other commercial enterprises.

The greatest areas of activity in the metals industries are located along the deeply fjorded southern and western coasts which are accessible to hydroelectric power and ocean shipping. In the ten years immediately following World War II, however, problems of reconstruction, aggravated by difficult overland communications, especially between north and south, have tended to hinder extensive mining and industrial advances (Fig. 1).

Mainsprings of Industrialization

Since 1945, the growth of Norwegian industry has accounted in great measure for the expansion of foreign trade and the significance of it to the economy. Norway is one of the chief exporting states in the world in relation to the total population with $195 worth of exports per person. In comparison, it can be pointed out that the United States' foreign trade value amounts to $100 per person. Shipping by far sets the pace as an earner of hard currency, and Norway has the world's third largest merchant marine with a total of about 10 million gross tons.

Some few products comprise the bulk of Norway's exports. These include paper, chemical and mechanical pulp, fish and fish products, iron ore, pyrites, copper, lead and zinc, non-ferrous metals, fertilizers, and some chemicals. Beginning in 1956, a notable change took place in the pattern of Norwegian exports. For the first time in history, metals and ores headed the list of exports. Ferro-alloys have been the most important, with notable increases also in the output of nickel, copper, zinc, and aluminum. Much of this activity is due to the marked increase in all phases of mining which in turn has caused an expansion of systematic geological and geographical

FIG. 1

mapping. In the past few years, estimates have shown that Norway's untouched ore deposits are both abundant and varied. Heretofore, the greater part of industrial goods were shipped abroad in an unproc-

essed state, but now the tendency is to refine the ores at home. Refining installations are in close association with the natural facilities of one or a combination of such factors as location near navigable fjords on the southern and western coasts, sites of ore bodies, and the availability of abundant supplies of cheap hydroelectric power.

Since World War II, the Norwegian government has underwritten most of the mineral extraction and industrial projects and is by far the largest capital investor in these areas. The necessary skilled labor force in turn has also increased greatly, due in part to government housing and welfare programs. At present, production is valued at about 50 million dollars per year—about 75 per cent of which is exported. It is anticipated that during 1959, Norway's manufacturing and mining industries will show an increase in production of 4 to 5 per cent including a boost of 8 per cent for the primary iron and other metals industries.

The basis for expanding Norwegian industry and the continuing development of metallic ore extraction is the great reserve of water power, particularly important to the electro-chemical and electro-metallurgical industries which use about two-fifths of all power produced. The country's generating capacity is now approaching 5 million kilowatts, the highest development per capita in the world.

The Aluminum Industry

Norsk Hydro, Norway's largest electrochemical concern, produces among other things great amounts of nitrogen for fertilizers based on hydroelectric power; however, the most important single product of water-power-based industry is aluminum. Norway's production of this metal depends upon imported bauxite ores and aluminum oxide brought close to the sites of hydroelectric power and near navigable fjords in order to lessen production costs. In 1953 Norway's largest aluminum plant commenced operations on the west coast near Trondheim at Sunndalsöra. The government owned plant had an initial production of 40,000 tons derived from less than half of the present 264 furnaces processing aluminum oxide from a Canadian firm which acquires bauxite from Jamaica. A similar installation was also established at nearby Årdal in Sognefjord. A privately-owned plant, *Electrokemisk* A/S in northern Norway, augments the Sunndal and Årdal installations. Five state-owned plants and *Electrokemisk* will have, by 1965, a combined capacity of 170,000 tons annually, more than any other west European aluminum plant has today. Norwegian aluminum production set a new record in 1958, with a total output of about 120,000 tons as compared with 78,000 tons in 1955, and all but 17,000 tons was exported (See Table).

TABLE 1
MAJOR COMMODITY PRODUCTION FIGURES
(Tons per Year)

	1955	*1956*	*1957*
Iron Ore & Titanium	1,413,417	1,740,454	1,697,737
Pyrites	843,776	852,987	831,304
Aluminum	78,000	—	96,000
Copper Ore	26,672	27,829	29,953
Zinc and Lead Ores	15,071	14,548	15,929

Iron and Steel

The mining of iron ore, ilmenite concentrates, and pyrites is one of the oldest of Norway's major export industries. Some of the mines now being worked were originally opened more than three centuries ago to supply domestic needs. Long-term experience, then, particularly in the extraction and reduction of low-grade ferrous ores shipped abroad in an unrefined state, has in great measure made it possible in recent years to process metals in Norwegian plants.

Norway's first and largest iron ore producer is *Sydvaranger* A/S, whose smelter is located in the Finnmark town of Kirkenes in northern Norway where it was established in 1906. Construction of harbor installations and plant buildings began in 1907, and by 1910 the company was producing its first taconite concentrates. Today it is the only firm in the world which mines magnetic taconite on a commercial scale with a production of a million tons of concentrates in 1955.

The iron ore port of Kirkenes lies on the southern side of Varangerfjord about 5 miles from the Soviet boundary on the Pasvik River (Fig. 2). This ice-free port is situated 220 miles north of the Arctic Circle at a latitude of 69° 44′ N., and its longitude, 30° 03′ E., places it due north of Alexandria, Egypt. The most important means of freight and passenger traffic movement is by water; and Oslo is 1450 miles southwestward by sea. There is no rail connection to the present railhead at Fauske near Bodø (Fig. 1), and Highway No. 50 to Kirkenes (Fig. 2) is frequently blocked by snow in winter. Kirkenes with its population of 4000 depends upon the iron ore deposits about five miles south of the city at Bjørnevatn connected to the port by an electric railway (Fig. 2). The taconite ores contain from 32 to 37 per cent iron and are low in phosphorus and sulphur, and the concentrates in powdered and briquette form average from 66 to 67 per cent iron.

Mining operations and ore shipments were virtually halted during World War II. By 1945, the German devastation in Finnmark brought about almost complete destruction of plants and production equipment at Kirkenes. Less than a dozen buildings were left standing. Reconstruction began in 1946 of the settlements of Kirkenes and Bjørnevatn, as well as railway and dock facilities, not to mention the converter. By April, 1952, mining operations were resumed and a month later the first ore shipment left

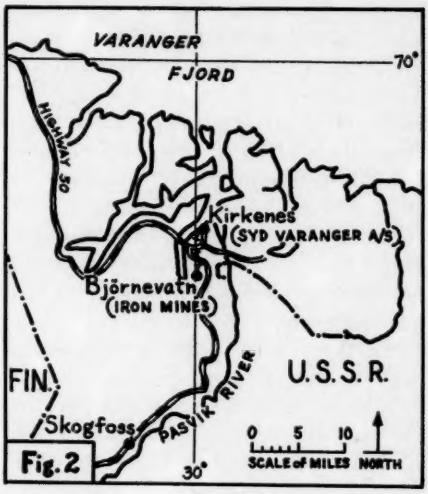

FIG. 2

Kirkenes—now a new town of 4000 people with another 1000 living at Bjørnevatn.

The new plant is designed to process about 2.3 million tons of ore a year, equivalent to about 1 to 2 million tons of iron concentrates, the production goal of 1958. At present most of the concentrates are shipped to West Germany, with smaller quantities going to Great Britain, Austria, and Belgium. Well over 100,000 tons of concentrates, however, are moved to the steel-rolling mill at Mo-i-Rana, a government-owned installation. Currently one-sixth of Norway's entire mining production originates at Sydvaranger which amounts to 80 per cent of all iron ore exports and more than 50 per cent of the value of all minerals from northern Norway's three provinces.

The ore deposits will continue to be mined by the favored open-pit methods for about 15 more years, at which time a ton of waste must be removed for every ton of ore, and mining will then become a shaft operation. Electric power for the mine, railroad, concentrator, and for community purposes is made available from a steam turbine plant and small

hydroelectric plants in the immediate area. Coal from Svalbard, 600 miles to the north, is also used for thermal purposes; however, a hydroelectric project currently in progress at Skogfoss Falls, about three miles from the Pasvik estuary, will lessen Sydvaranger's dependence on costlier coal imports (See Fig. 2).

Another northern Norway iron producer previously mentioned is *Norsk Jernverk* A/S located 30 miles south of the Arctic Circle on the railway at Mo-i-Rana. It was established in 1955 and is the first integrated iron and steel works in Norway. Here the world's largest electric pig iron smelting furnaces turn out about 250,000 tons a year. A fourth furnace, recently installed, will step up the capacity to over 300,000 tons annually, and, ultimately, a proposed addition of four furnaces will yield about a million tons of iron and steel a year. Two-thirds of the production is sold abroad, and the remainder is marketed in Norway. So far, the low-grade ore has been concentrated to 65 per cent iron, the minimum requirement which Mo-i-Rana needs for its operation. Recently a beneficiation plant has increased the iron content to 70 per cent from a flotation method developed at the Norwegian University of Technology.

The most recent adventure in the Norwegian metals industry is that of *Titania* A/S, which has developed a process at Jössingfjord in southern Norway to remove iron from titanium metal derived from ilmenite ore. The result is raw material containing 45 to 50 per cent titanium oxide; it then, in turn, is transformed into titanium metal at considerable cost. Another ambitious project is the mining of pyrites at Løkken which is Norway's largest producer with 400,000 tons per year. Most of the output is converted into sulphur and copper matte. At Mo-i-Rana pyrite is the by-product of iron and lead mining. Ferro-columbium was added to the list of mining exports in 1957 with production located to Søve in Telemark province—the only deposit in Europe. It is exported as columbite concentrates. Ferro-silicon is also smelted in Southern Norway and is shipped to western Europe.

Other Metals

Zinc, lead, and copper production has also shown recent gains in Norway (Table 1). At the Bleikvassli mine zinc concentrates contain as much as 52 per cent copper. This mine also produces lead concentrates of 60 per cent. Cupriferous pyrites are mined at Sulitjelma, Grong, and explorations of these are being carried out at Kautokeino in Finnmark. If plans materialize soon, Norway will be able to export pure copper. Small amounts of molybdenite are found at Knaben in southern Norway, totalling 17 per cent of the world's production.

The promise of continued exploitation of varied ores and their sale abroad as well as their utilization in home industries assured of ample hydroelectric power will mean a continued rise in the industrialization of Norway in the years ahead.

What Is The National Council?

The National Council for Geographic Education was organized in 1914 to promote and advance geographic education in the public schools and colleges of the United States.

To achieve its purpose the National Council for Geographic Education has sponsored and will continue to sponsor many worthwhile projects. The organization particularly wishes to improve instruction in geography and the social studies and to encourage research in all phases of geographic education at each grade level, as well as in college and graduate school work. By carrying out its program, the Council hopes to foster geographic understandings and to increase the effectiveness of the teaching of geography.

THE CULTURAL MIDWEST

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THE Midwest, or Middle West, is a puzzle in American cultural geography. The term is locational, yet it stems not from the definition of professional geographers but from common speech. It is, however, a misleading expression, for it usually entails neither the geographic West, nor the middle of it.

Unfortunately, geographers themselves are equally inconsistent concerning both nature and location of the Midwest. Most geographies involving the United States either ignore the Midwest, treat it as an aspect of sectionalism, or present it as a region—usually based on economic criteria. Some authors have described a small concentration of east-central states usually limited to Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, Iowa and Missouri. Others have preferred the inclusion of North and South Dakota, Kansas, Nebraska, Texas and Oklahoma.

The most thorough study of the Midwest has been the recent work edited by Garland.[1] He treats the Midwest as an economic region of the eastern United States. This large region is centered about Chicago and includes more eastern areas than are usually encountered in Midwest definitions. It extends from Lake Ontario to the eastern plains and encompasses portions of West Virginia and Pennsylvania as well as all of Kentucky.[2]

The Midwest as a Cultural Region

This lack of uniformity prompted the following attempt to define the Midwest as it exists in the mid-twentieth century. The result is an area which may be used for geographic comparison and offers the teacher an objective reference to a commonly misunderstood concept. It should be noted that this Midwest is defined by psychological rather than economic criteria, for this section of the United States can stand as a region only in a cultural sense.

After some deliberation the writer decided to define that area of the United States in which the residents looked upon themselves as Midwesterners, regardless of their attitudes toward the size and location of the area. Five hundred and thirty-six sample communities were selected along several arbitrary radii extending for hundreds of miles in all directions from Chicago, a city universally accepted as Midwestern. In each instance the postmaster of the village was sent a single item questionnaire which, in essence, asked, "In your opinion does your community lie in the Midwest?" The recipient was given only a *yes* or *no* choice in his answer, but his comments or qualifications were invited. He also was encouraged to discuss the question with other members of the community.

Of the 536 postmasters approached in this fashion, 480, or almost 90 per cent, returned the questionnaire. Two hundred and sixty-two of these answered the question affirmative. The bulk of these responses are grouped in the east-central part of the United States (Fig. 1). The distinction between areas of Midwestern communities and the bordering sections varies considerably, but a prominent central core is discernable.

On the basis of these data, one may draw a regional boundary around this core area. Because, however, the bound-

[1] John H. Garland (ed.). *The North American Midwest.* John Wiley & Sons, Inc., New York, 1955.

[2] *Ibid.*, pp. 3-15.

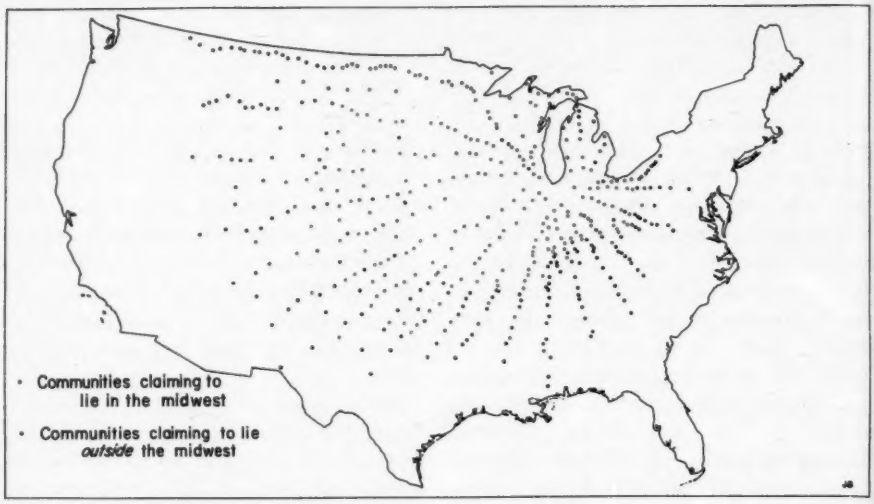

FIG. 1. Of the 536 rural postmasters who were sent questionnaires, 480 in the communities shown replied.

ary is not always a sharp one, it is augmented by a peripheral zone in those areas where neighboring communities were in disagreement. These areas are particularly noticeable in the southwest states of Colorado and Oklahoma (Fig. 2).

The cultural Midwest that this core represents is set off in a marked fashion from the Northwest along the Montana-Dakota boundary. Similar clarity is evident near Arkansas and Tennessee. In the Great Lakes, however, northern Michigan indicates local doubt. Again, southeastern Ohio and southern Indiana along with Kentucky provide a marginal belt between the Midwest and the South. It is the Southwest that is most difficult to judge. Oklahoma and Colorado include extensive transitional areas that separate the Midwest from the South, Southwest, and West. Nebraska contains an enclave in the North Platte Valley which is related to the peripheral zone though it lies apart from it.

Thus defined, the Midwest is a large core area containing the bulk of the American population that calls itself Midwestern. Outlined by county boundaries, it spreads over all or nearly all of Ohio, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska and Kansas (Fig. 3). It also includes the greater part of Michigan and significant portions of Oklahoma. The cultural region contains approximately 20 per cent of the land area of the continental United States lying largely in the Mississippi River drainage basin.

The population of the cultural Midwest amounts to 28 per cent of that of the entire nation (1950) but is very unevenly distributed. While the geographic center of the area lies within Calhoun County in western Iowa, the greater number of large communities lies in the extreme east. Much of the population in Michigan, Ohio, Indiana and Illinois is urban, a sharp contrast to the plains states in the west where Omaha, Kansas City and Wichita stand out as the only sizable communities.

The Individual's Concept of the Midwest

A significant percentage of the individuals who returned questionnaires

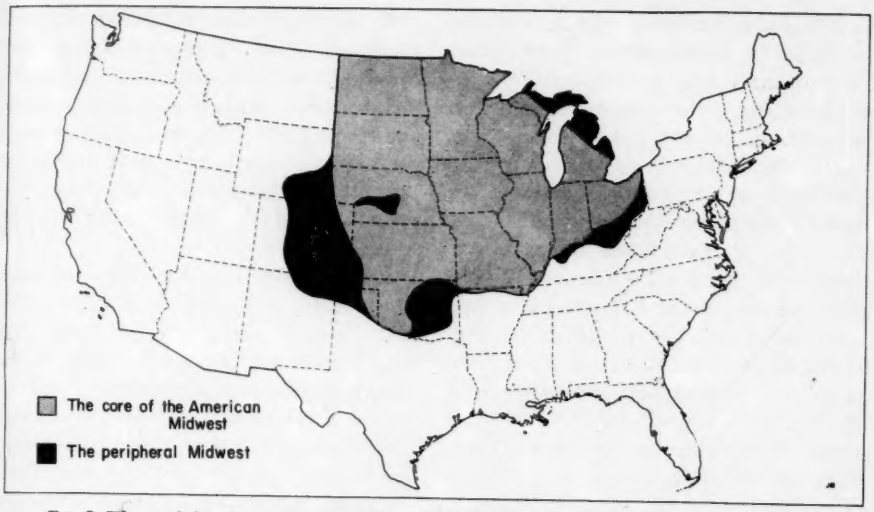

FIG. 2. The peripheral areas are zonal boundaries in which many communities claim to lie outside the Midwest.

FIG. 3. Outlined by political boundaries, the Midwest contains 20 per cent of the nation's land area and 28 per cent of the population (1950).

added comments or qualifications. An analysis of these comments demonstrates some of the factors that influence the individual's spatial concept of the Midwest. In order of frequency these factors are:

(1) The tendency of the person to answer in terms of his entire state. Although the question specifically asked about the local community, many answers were in terms of state location. This is most evident in the Dakotas where persons west of the Missouri River, who otherwise might be considered Westerners, made it clear that they were citizens of North or South Dakota—*Midwestern* states. Montana replies, however, consistently identified that state as a western one.

(2) The most common single factor recognized by individuals was their identification of the Midwest with the geographic center of the United States or its location midway between the coasts. It is significant here to note that "mid" or "middle" is interpreted by many lay people to mean midcontinent. It is equally interesting that few comments were made concerning southern or northern borders. Apparently the average American, or at least the average Midwesterner, sees the Midwest as a central region oriented between East and West.

(3) Almost as many comments inferred that the Mississippi River is a boundary of the Midwest. In most, but not all cases, it was implied that this river formed the eastern boundary of the Midwest and excluded the states of Michigan, Ohio, Indiana, Illinois and Wisconsin.

(4) In contrast is the attitude represented by perhaps half as many responses which defined the Midwest in very simple geographic terms as the area between the Appalachians and the Rockies, or the Upper Mississippi River drainage basin. These individuals would include the disputed states mentioned in the preceding paragraph.

(5) Numerous cultural forces also enter the problem as factors. Chief among these are radio and newspaper regionalization, sports leagues and conferences, and time zones. The influence of the press is particularly evident in the Minneapolis-St. Paul district where the surrounding area is described as the "Upper Midwest."

It would seem that Americans attempt to interpret the term in a geographic sense, usually defining it as "half way west." Historically, however, the West itself has existed in the Mississippi valley, on the great plains, and on the Pacific coast during different stages of American history. It is not alarming, then, that sectionalism has confused the Midwesterner's concept of his own area. The westward advance of the frontier has been accompanied by a similar extension of the Midwest, and newer portions of the Midwest are justifiably puzzled by the presence of urban peoples east of the Mississippi who call themselves by the same term.

Typical of the emotional conflict generated by local attitudes is the comment of a Missouri Postmaster: ". . . I consider from the Mississippi River west through the plains states to be Midwest. Also we resent persons from Ohio and Indiana referring to themselves as 'Midwesterners' as actually they are 'Mideasterners' . . ."

Summary

The midwestern core represented in Figures 2 and 3 is offered to the professional geographer as an opportunity to bring order out of chaos. Inasmuch as it may be an attempt to express a sectional feeling in regional terms, full agreement is likely to be lacking.

The regional specialist, however, may find added meaning in the existing multitude of "midwests." Most of these areas are smaller and are centered farther east, yet nearly all of them fall within this core area. In at least one instance, there

is close resemblance between it and another representation of the Midwest. This is the sectional division used by Wright, who sees the Midwest as a summary of several agricultural regions.[3]

[3] Alfred J. Wright. *United States and Canada.* Appleton-Century-Crofts, Inc., New York, 1948. pp. 239-40.

The teaching geographer, too, can expect to be the object of inquiries concerning this aspect of American Geography. Whether or not there exists a natural region which could be called the Midwest, there is an area of the central United States in which the residents consider themselves to be Midwesterners.

GEOGRAPHIC CONCEPTS FOR FIRST GRADERS*

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THERE are many geographic concepts that first grade children can develop during performance of their many first grade activities. For example, careful observation of daily weather, seasonal changes, and the effect of climate on the world around them and on their own activities can be sources from which geographical concepts may grow. Children can record the daily weather by putting pictorial symbols on the calendar to represent the sun, clouds, rain or snow. Or they might use colored thumb tacks to represent the weather: yellow for sunny, gray for cloudy, blue for rain or snow.

Children should be taken outdoors to observe the grounds during and after a rain to see what they can discover about the effect of the slope of the land. Many natural features can be found in miniature where bare ground is exposed to action of sun, wind, rain, running water. Children may thus observe actual illustrations of streams, tributaries, lakes, cliffs, shore lines, islands, and peninsulas in miniature.[1] These same features can be reproduced in the classroom on a sandtable or in individual large deep baking pans where water can be poured and the children can observe the path taken by the water and watch how it accumulates in low spots to form ponds and islands, etc. Whenever observation is made of reality in miniature, however, care must be taken to have the children also observe these same features in full size to prevent development of misconceptions. First graders as a group might be expected to learn something of the relation of slope to the flow of water and something about drainage. Some of the children, however, will be learning much more.

Awareness of seasonal change should be encouraged. Attention should be called to the sequence of changes as trees and other plants produce leaves, blossoms, and pods or fruit.

Attention should also be called to the effect of daily changes in weather and the changing seasons. They should note the difference in clothing. They should be aware that (1) they need rubber boots when it rains, (2) warmer clothing to protect them in colder weather, and (3)

* This article is the third of a series and is based on a doctoral dissertation entitled, "A Framework for Developing Map Skills in Primary Grade Social Studies," Stanford University, 1957.

[1] Zoe A. Thralls, Isabelle K. Hart and Erna Grassmuck, "Geography in the Elementary School," *Teaching of Geography,* 32nd Yearbook, National Society for the Study of Education. Public School Publishing Company, Bloomington, Illinois, 1933, 221.

lighter clothing in warmer weather. Attention should be called to the difference in activities which are associated with changes in seasons. Discussion and dramatic play can follow observation. Children's concepts can be broadened beyond what they themselves might notice or relate by questions the teacher adds in guiding discussion and play. How many children know, for example, that one of the reasons we have a long summer vacation is because decades ago and in some farming areas today children were and are needed to help with the work on the farm during the summer months?

Some concepts can be substantiated by growing plants and having pets in the classroom. Children can study: (1) the effect of growth on plants in different kinds of soil, (2) the effect of watering or the neglect to do so, and (3) the effect of sun or lack of it. By observing pets children can learn about their eating, resting and other habits.

Poole, Barton, and Baker[2] list the following concepts as possible of development with first grade children:

Earth and Universe:
- The sun shines on the earth.

Land and Landforms:
- Some land is hilly and some land is level.
- There is soil on the surface of the land.
- Plants grow on the land.
- Streams flow across the land.
- There are lakes on the land.
- People travel across the land.

Soil:
- Soil is found on yards, farms, and gardens.
- Plants grow from the soil.
- Food comes from soil.

Water and Water Bodies:
- Some water from rain flows away and some soaks into the ground.
- Water forms streams and lakes.

Weather and Climate:
- Water falls as rain.
- Rain falls from clouds.
- The sun shines on clear days.
- Plants need sunshine and rain.

Plant Life:
- Some plants are cultivated.
- Some plants grow naturally in the surroundings.
- Many plants grow from seeds.
- Plants help to provide food.
- People harvest products from plants.
- Plants help to provide interesting scenery.

Animal Life:
- Some animals are domesticated.
- Some animals live naturally in the environment.
- Animals live and move about in different ways.
- Animals help to provide food.
- Some animals carry on work for man.
- Some animals are pets.
- Animals help to provide interesting environments.

Locational & Spatial Relationships:
- People use transportation to overcome distance.
- People use communication to overcome distance.

Distribution of Population:
- Most people live in family groups.
- Some people live in rural environments.
- Some people live in urban environments.

Houses & Settlements:
- People need houses and other buildings for shelter.
- Animals need shelter.

Production:
- Different members of a family carry on work.
- Man uses vehicles, machines, and tools to carry on his work.
- Farmers raise plants and animals.
- Some people help carry on transportation.
- Some people sell things in stores and markets.

Transportation & Communication:
- People travel from place to place.
- People haul goods from place to place.
- People carry on transportation by automobile, bus, truck, train, boat, airplane, and horse-drawn vehicle.
- People communicate by means of letter, telephone, or telegram.

Conservation:
- People enjoy natural features in the environment.
- People often help to make their surroundings more beautiful and useful.

Recreation:
- People have fun in their homes.
- People have fun outdoors.
- People like to play with pets.
- People like to look at animals.
- People like to look at natural scenery.
- People like to travel.

Many of these concepts have already been discussed in the suggested pupil experiences earlier in this series of articles. Almost all are possible of first-hand ob-

[2] Poole, Barton, Baker, Concept Chart, *Geography Foundation Series*. Bobbs-Merrill Company, New York.

servation in the Family Community and in the School Community. Those that are not easily observable in the immediate out-of-doors can often easily be developed in classroom demonstrations. Those concepts that are outside the first hand experience of a particular group of first graders should be omitted.

"HOME MOVIES" IN THE GEOGRAPHY CLASSROOM

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THE USE of commercially made slides and motion pictures and amateur-made slides is widespread in elementary, secondary, and college teaching. Numerous articles, in this and other journals, have dealt with the problems and benefits of using commercial motion pictures and slides in the teaching of geography. Other articles have attempted to help the geography teacher produce better slides for classroom use with his or her own camera. One type of photography that has not been utilized to its fullest extent, however, is the amateur motion picture or "home movie."[1]

Advantages of "Home Movies"

The numerous advantages of the teacher-made movie film may make it a standard piece of equipment in the geography classroom. One of its most important uses is to bridge the gap that exists between the roughly drawn blackboard sketch and the professionally made motion picture film. The home movie film, like the blackboard drawing, is the creation of the individual teacher and can thus express his or her own philosophies and ideas. It enables the teacher to combine, relatively cheaply, the personal quality of the blackboard diagram with the dynamic nature of the motion picture film. Unlike the blackboard sketch, however, the home movie is a permanent creation. It can be used year after year without spending time to reproduce it each time it is needed.

The amateur-made film also possesses many of the favorable characteristics of the commercial film. As with professionally made films, the greatest advantage of the use of amateur motion picture films in the classroom lies in the ability to illustrate any phenomena or process in which motion is involved. Slides, charts, and blackboard drawings, although extremely useful teaching aids, are unable to portray motion. Even though a series of such devices is used, the student often finds it difficult to associate motion with the process being described. This is particularly true of many physical phenomena, such as folding, faulting, leaching, adiabatic cooling, etc. Many cultural aspects of the landscape are more easily explained if their inherent motion can actually be shown. This single virtue of being able to show motion will alone outweigh any minor technical difficulties encountered in film production.

A very important advantage which the amateur-made film has over the commercially produced film is its ability to show things familiar to the student. By using the local physical and cultural landscapes as subject matter, the film becomes much more pertinent to the student than does a professional film with no relationship to the student's environment. The film

[1] The terms "amateur motion picture" and "home movie," as used in this paper, refer to any motion picture film made by an amateur photographer without the direct assistance of a professional cinematographer.

made by the teacher can also emphasize particular points which are significant to the local environment. Thus, in the Southwestern United States, arid land erosion could be emphasized, whereas in New England the landforms resulting from glaciation could be the theme.

Another point in favor of the home movie film over the commercial film is the ease with which the films can be used in the classroom. The small size and simplicity of operation of the average home movie projector enable it to be a permanent fixture in the classroom. There it can be switched on for short sequences whenever an illustration is needed.

Pitfalls

It should be acknowledged that there are pitfalls in the use of the amateur movie camera by teachers. Many arguments have, in fact, been advanced to discourage the geography teacher from attempting to use such a teaching device. One such argument states that the amount of time needed to take a picture and the difficulty of synchronizing a movie to the accompanying lecture preclude any beneficial use of the home movie camera.[2] Other arguments against the use of motion picture cameras are based on the amount of technical skill required to produce satisfactory films, and the difficulty of making a film that illustrates a specific point or line of thought. In addition to these arguments, many teachers have probably been reluctant to attempt to use amateur motion pictures as teaching aids because of the cost involved.

The author believes, however, that the benefits to be derived from using home movies in the classroom far outweigh any of the arguments against them. This belief is reinforced by certain weaknesses in the arguments against the use of such pictures. For instance, the time involved in the actual taking of motion pictures is very little more than that required to take slides. It is true that some time must be spent on planning a motion picture scene before actually taking the picture. But it is equally true that most slides would be greatly improved if some planning were done before the slides were made.

Far from being difficult to adapt to a teacher's lecture, the home movie's flexibility is one of its major advantages. If the geography teacher makes his own motion picture films, he can tailor them precisely to his lectures. He can also alter them relatively easily to fit subsequent changes in lecture schedules or subject material. Since the teacher seldom owns the professionally made films which he uses, it is only rarely that he can alter them to fit his needs.

The argument that most geography teachers do not possess the technical skill to make motion pictures suitable for classroom use is very rapidly losing validity. The development of the "electric eye" camera, tape splicing, simplified titlers, and other equipment has made amateur motion picture photography relatively simple to master. This is not to say that the new owner of a motion picture camera can expect professional results with his first roll of film. Thorough study of the camera, the instruction booklet and other literature, conferences with camera store personnel, and above all, the taking of many, many feet of film are prerequisites to producing a film of suitable quality. But by becoming proficient in the use of the motion picture camera and the techniques of film production, the teacher will gain a valuable tool to be used in the [illegible] of teaching.

The cost of amateur motion picture photography is no longer the obstacle that it once was. Many eight millimeter movie cameras, the size most commonly used by amateurs, are now competitive

[2] Allen K. Thomas and H. F. Raup, "Photography for the Geography Teacher," *The Journal of Geography*, 55 (May, 1956), 243-247.

in price with the more popular thirty-five millimeter still cameras. A number of well-known companies are now making eight millimeter motion picture cameras that sell for less than fifty dollars. Any of these inexpensive cameras, when its operation is thoroughly understood, and if used with generous imagination, will give results quite suitable for classroom use. Color films for such cameras cost approximately $4.35 for 50 feet, this price including the cost of processing. It takes approximately three and one-half minutes to run 50 feet of this film on a screen. One should not neglect, however, the possibility of using black and white film, which costs $2.65 per 50 feet, including processing. Unless color is an integral part of the principle that one is illustrating, black and white film will serve as well as color film.

Suggested Topics for Film Production

What kinds of films can the geography teacher make for use in his classroom? The list of such films is limited only by the imagination and skill of the teacher. The following list will show the wide range of subject matter possible.

A. The surface of the earth.
   1. Animated films to show the processes of folding, faulting, subsidence, etc., possibly combined with scenes showing the actual results of these processes.
   2. Time-sequence photography to show the effects of erosion and deposition.
   3. Animated sequences to explain leaching, illuviation, eluviation, etc.
   4. Three dimensional models or sand tables to show many of the tectonic and erosional forces.

B. Weather.
   1. Animated weather maps to illustrate the movements of air masses, temperature changes, etc., during a week, month, or year.
   2. Time-sequence photography to show the actual build-up of clouds or thunderstorms or the approach of a well-developed front.

C. Changing boundaries.
   1. Animated maps to demonstrate the expansion, contraction, or other changes that crop areas undergo in a period of several years.
   2. Animated maps showing the annual shifting of climatic boundaries to explain the zonal qualities of most climatic boundaries.
   3. Animated maps showing changing political boundaries to illustrate the expansion, contraction, emergence, and disappearance of states.

D. Cartography.
   1. A combination of animated and natural motion sequences to demonstrate the processes involved in transferring the spherical globe onto a flat sheet of paper. Animation to explain the making of certain mathematically constructed map grids.
   2. The principles of longitude, latitude, time, etc., shown by natural motion or animated films.

E. Regional subjects.
   The landscapes, urban scenes, industrial activities, etc., which many teachers photograph during their travels and subsequently show to their classes could be pictured as effectively with motion pictures as with the more commonly used slides.

The above list does not exhaust the possibilities, but is simply an indication of what is possible with the home movie camera.

Some Guidelines

Once the mechanics of the motion picture camera have been mastered, adherence to a short list of rules will further increase the quality of the finished film. First, in making a home movie for classroom use, one should always prepare a detailed script or scenario before any film is exposed. Write out, in detail, what the film is going to show. Decide what camera angles are to be used and where to use close-ups, medium distance, and long distance shots. Plan ahead regarding the titles that are to be used. Once the film has been outlined on paper, actual shooting can begin. It is not necessary, of course, to film the scenes in the order in which they will appear in the finished film. Rather, the various shots can be photographed at one's convenience and rearranged after the entire picture is on film.

This leads to the second rule that should be followed, namely, that of careful editing. Editing consists simply of removing from the roll any film that is not technically acceptable: poorly exposed

film, or film that is jerky or out of focus, is cut out and thrown away. The more critical the editor is in this job, the better will be the finished film. When all undesirable film has been discarded (and any reshooting that is necessary has been done) final editing takes place. This involves simply the splicing together of the various pieces of film to conform to the written script.

The third of the major rules in making home movies is to keep them simple! A film that is too complex, that tries to show too much, or to illustrate too many concepts, almost invariably is a failure. Before a foot of film is exposed, the photographer should critically examine the script to see that the story he is trying to tell is told simply and completely.

Other rules of equal importance, which, if followed will result in more professional looking films are as follows:

1. Always use a tripod. Use of a tripod for every scene that is filmed will help eliminate much of the jerkiness for which home movies are notorious.

2. Use a light meter (exposure meter). If used properly, a light meter will not only result in better exposed films, but will also save considerable money by reducing the amount of film wasted.

3. Keep camera motion or "panning" to a minimum. "Panning" is the act of turning the camera, either horizontally or vertically, in order to get an entire subject on one sequence of film. While this is necessary at times, too much of it can be annoying to the audience. Remember, the "motion" in "motion picture camera" refers to the subject, not the camera!

The use of animation has been mentioned several times in this paper. Any of the numerous books on home movie photography will give detailed instructions on making animated films.[3] Basically, the process consists of exposing one or two frames of the film, then making alterations in the map, chart, diagram, or whatever is being photographed, and exposing one or two frames of the altered subject. When the film is run through the projector at normal speed, the subject appears to be moving. The amateur photographer, of course, can rarely attain the smoothness of motion of the professionally made cartoon, such as those of Walt Disney. The amateur-made animated film will, however, be a decided improvement on hastily drawn blackboard sketches.

Summary

The home movie camera can be a useful teaching tool outside of the classroom, as well as in. The making of an actual motion picture would be an excellent project for a high school geography club. The preparation of a script, drawing of maps and animated diagrams, the actual photography, editing, and titling the film, could easily constitute a club's major activity during a school year.

If one takes the time to learn the operation of a motion picture camera, and if one gives full vent to his artistic imagination, he can inject considerable vitality into the teaching of geography. The home movie camera, far from being a toy or simply a device to record one's vacation, can aid the teacher in locating, analyzing, and explaining many geographic phenomena.

[3] See, for example: *How to Make Good Home Movies*, published by Eastman Kodak. Eastman also publishes a series of *Data Books* which are helpful to the amateur motion picture photographer.

Are You Going?

The 45th Annual Meeting of the National Council for Geographic Education will be held in Cincinnati, Ohio, on November 25-6. 1960. Will we see you there?

THE NATIONAL COUNCIL AT WORK

The 45th meeting of the National Council for Geographic Education, which was held in Detroit, was very successful. Several excellent papers were presented in both the general and sectional meetings. The lecture given at the Annual Dinner was very interesting and a timely one.

Attendance at the meeting was good. Especially noteworthy, however, was the number of younger geographers, teachers, and students participating. Dr. Tom Gault and his staff of Professor Zink, Webber, and Winslow brought 37 students with them from Indiana State College, Indiana, Pennsylvania. Six students and Professor Ben F. Richason represented Carroll College, Waukesha, Wisconsin. Dr. Oliver H. Heintzelman and four students drove to the meeting from Oregon State College, Corvallis. Students were aso present from Trenton State College, University of Wisconsin, Michigan State University, Eastern Michigan University, and Kutztown State Teachers College. Such participation is commendable and it is believed that this type of activity should be expanded.

Much progress has been made in the activities of the Council. Many committees are now at work on projects that will be of aid to all teachers of geography and the social studies. It was decided that the first volume of a publication tentatively called "Guide Lines in Geography" be prepared. This publication is to be similar to a yearbook, but will not necessarily be published at regular intervals. Dr. A. K. Botts, Trenton State College, Trenton, New Jersey, has accepted the chairmanship of the committee. Should you have ideas or suggestions for specific topics to be included, please correspond with him.

Other committees that have been appointed are as follows:

Research Fund Committee—Dr. Gilbert F. White, Chairman, Department of Geography, University of Chicago, Chicago, Illinois; Dr. Mildred Danklefson Walmsley, Dr. Earl B. Shaw, Dr. Ralph E. Olson.

Nominating Committee—Dr. Kermit Laidig, Chairman, Department of Geography, Illinois State Normal University, Normal, Illinois; Dr. Norman Carls, Miss Florence Cullin, Dr. Robert Goodman.

Journal Awards Committee—Dr. Elizabeth S. Eiselen, Chairman, Department of Geography, Wellesley College, Wellesley 81, Massachusetts; Miss Maud N. Austin, Dr. Loyal Durand, Miss Mary Grant.

Award for Geographic Articles in Non-Professional Publications—Miss Viola M. Bohn, Chairman, Bismarck Junior College, Bismarck, North Dakota; Miss Dorothy Furman, Mr. Warren E. Hultquist, Dr. Earl B. Shaw, Mr. Malone Young.

Program Committee for 46th Meeting—Dr. John W. Morris, Chairman, Department of Geography, University of Oklahoma, Norman, Oklahoma; Dr. Jewell Phelps, Dr. Lyle Fletcher, Dr. John Wesley Coulter.

Should you have suggestions about articles you believe worthy of consideration for award, please send your information to the chairman of the committee. Members having research projects they believe worthy of support should contact Dr. White, Chairman of the Research Fund Committee. The Program Committee and the Nominating Committee are certainly open to suggestions.

The program for the 46th meeting of the NCGE, to be held in Cincinnati, November 25-26, is well along in the planning stage. Dr. John Wesley Coulter, University of Cincinnati, is Chairman of the Local Arrangements Committee. The University of Cincinnati is cooperating fully to make the meeting a successful one.

Officers of the Council are always willing to be of service. If they can help you, please feel free to contact them. For the year 1960 the officers are:

President—John W. Morris, University of Oklahoma, Norman, Oklahoma,
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Editor—Thomas F. Barton, Indiana University, Bloomington.

JOHN W. MORRIS, *President*

BOOK REVIEWS

Jonreed Lauritzen. **Treasure of the High Country.** Little, Brown and Company, Boston, Massachusetts and Toronto, Canada. 1959. 211 pages with illustrations. $3.00.

In its setting among the buttes, mesas, and cliffs of the northern Arizona country, this is an exciting story of the Marriner family—especially the children, two brothers, Michael and Tenn, and their little sister, Ridi. The Marriner family lives on a ranch at the foot of the cliffs which border the high country, a country which the children have peopled with the mysterious and legendary *Guaitsis* of the Indians. The ranch is visited by Topaz, a semi-legendary character with red hair, a red eye, and his red hound, a flesh-and-blood version of the Indian's

and white men's legends who wanders about the country distributing gold pieces in exchange for good and giving rise to the legend of his hidden treasure.

Ridi decides to find the gold and becomes lost in the high country on her treasure hunting expedition. The boys set out to find her and encounter a gang of bank robbers, spend a weird and ghostly night in the country above the cliffs, and encounter the mystery man, Topaz.

The author has done an excellent job of describing and creating the mood of the Arizona country in which he lives, in a vocabulary which should present little difficulty to good readers in the fourth or fifth grades. The book is illustrated with well chosen sketches of the country, characters, and events in the story. This is excellent children's fiction in a geographic setting.

WALLACE E. AKIN

Drake University

Preston E. James, Editor. **New Viewpoints in Geography.** Twenty-ninth Yearbook of the National Council for the Social Studies, 1959. xi and 260 pages with maps, $4. paperbound; $5. clothbound.

The Twenty-ninth Yearbook is divided into two parts with an introductory chapter. At the very beginning the editor expresses his views as to how the hard core of geography may be returned to the social studies. Part One follows with an emphasis upon geography as seen by the professional geographers. Included in the approximately 100 pages devoted to this subject are chapters with new viewpoints on physical geography, human geography, economic geography, regional geography, and cartography.

Part Two emphasizes new viewpoints in the teaching of geography. Included in the approximately 150 pages given to this topic are chapters on geography in the elementary social studies program; historical geography; culture areas; teaching geography out-of-doors; the use of maps, globes, and pictures; the teaching of physical geography; geographic training for social studies teachers; training for teaching geographic concepts and generalizations; and the teaching of geography in Russia.

Each chapter is written by a specialist in the field of geography under discussion. Most authors have accomplished the aim of the Yearbook stated in the foreword—to make the role of geography in training students for good citizenship more "widely understood among school people"; and especially to lift "a corner of the geographic curtain and to let social studies teachers look inside."

This aim is harder to accomplish in some cases than in others. For example, in physical geography the new viewpoints of Rossby and other meteorologists about atmospheric circulation may be difficult for the nonprofessional geographer to understand; but the reader will profit by the careful documentation. Furthermore, he will understand more clearly what to teach when he turns to the well written chapter on the teaching of physical geography.

Throughout the book, and especially in chapters 14 and 15, emphasis is placed upon the need for teachers with a strong geographic background; they are needed to present the subject properly whether it be taught within or without an integrated social studies program. Moreover, geographers are urged to speed publication of text books incorporating new viewpoints in geography.

Printing in the Twenty-ninth Yearbook is easy to read and illustrations are clear and attractive. Some may be disappointed that no chapter is devoted to new viewpoints in political geography; and some may wish that the authors had prepared an index.

The reviewer feels that both professional geographers and teachers in the broader field of the social studies should be grateful to the editor, to the contributing authors, and to the National Council for the Social Studies for making publication of the Twenty-ninth Yearbook possible.

EARL B. SHAW

University of Delaware

Bruce F. Johnston. **The Staple Food Economies of Western Tropical Africa.** Stanford University Press, Stanford. 1958. 305 pp. Illustrated.

In a world where half the people are more often hungry than otherwise, the next best thing to more food is more knowledge about the food there is, where it is grown and used, and how the supply of it can be increased. Mr. Johnston's book is an admirable addition to such knowledge. It brings together for the first time all available information concerning the distribution, relative importance and characteristics of the food staples of western tropical Africa. It focuses particular attention on millets and sorghums, corn, rice, manioc, yams, plantains, cocoyams, and sweet potatoes.

Among the topics covered, those of especial interest to geographers are the regional distribution of these staples: the environmental and cultural factors affecting their distribution, and the prospects of increasing their supply through plant breeding and selection, insect and pest control, and the increased use of crop rotations and fertilizer.

Mr. Johnston's optimistic conclusion (that a much greater agricultural productivity is possible, and that it should make "a positive contribution to the process of economic growth") enjoys the support of most of the evidence—evidence which he has marshalled with clarity, economy and deceptive ease. His book is one to be grateful for.

GEORGE H. T. KIMBLE

Indiana University

GEOGRAPHIC MATERIALS RECEIVED

Mary Foley Horkheimer and John W. Diffor. **Educators Guide to Free Filmstrips,** 11th ed. Educators Progress Service, Randolph, Wisconsin. 191 pages with instructions on how to use filmstrips and guide, suggestions for booking free filmstrips, and table of contents. $6.00.

Julian H. Steward and Louis C. Faron. **Native Peoples of South America.** McGraw-Hill Book Co., Inc., 330 W. 42nd Street, N.Y. 36, N.Y. 481 pages with photographs, bibliography, table of contents, and index. $8.50.

Jack Steffan. **Mountain of Fire.** The John Day Company, Inc., 210 Madison Ave., New York, 1959. A novel for juvenile ages 12 up with a map, table of contents, and 191 pages. $3.50.

Marjory Stoneman Douglas. **Alligator Crossing.** The John Day Company, Inc., 210 Madison Ave., New York, 1959. A novel for juvenile ages 12 up with a map, table of contents, and 192 pages. $3.50.

John C. Caldwell. **Let's Visit China.** The John Day Company, Inc., 210 Madison Ave., New York, 1959. 95 pages with pictures, table of contents, index, and suggested references for juvenile ages 8-14. $2.95.

John C. Caldwell. **Let's Visit West Africa.** The John Day Company, Inc., 210 Madison Avenue, New York, 1959. 94 pages with pictures, maps, table of contents, index, and suggested references for juvenile ages 8-12. $2.95.

Peter Buckley. **The Spanish Plateau.** Coward-McCann, Inc., 210 Madison Ave., New York, 1959. 95 pages with pictures, maps, table of contents and index for ages 10-15. $2.50.

John A. Wallace. **Getting to Know the U.S.S.R.** Coward-McCann, Inc., 210 Madison Ave., New York, 1959. 62 pages with maps, drawings, table of contents, and index. $2.50.

Barnett D. Laschever. **Getting to Know Hawaii.** Coward-McCann, Inc., 210 Madison Ave., New York, 1959. 62 pages with maps, drawings, table of contents, and index. $2.50.

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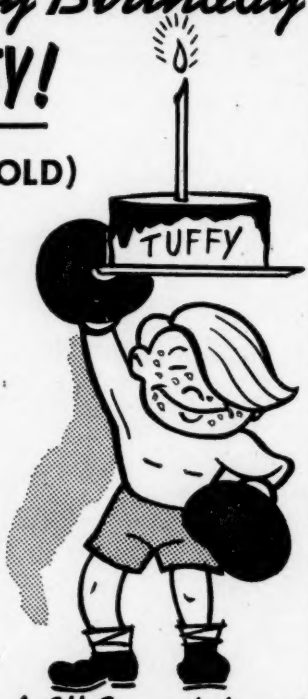

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Erick Berry. **Men, Moss and Reindeer.** Coward-McCann, Inc., 210 Madison Ave., New York, 1959. 95 pages with a map, pictures, table of contents, and index for juvenile ages 10-15. $2.50.

Diana Hammond. **Let's Go to a Harbor.** G. P. Putnam's Sons, 210 Madison Ave., New York, 1959. 47 pages with drawings, glossary, for juvenile ages 8-12. $1.95.

Yi-Fu Tuan. **Pediments in Southeastern Arizona.** University of California Press, Berkeley, 1959. University of California Publications in Geography Volume 13. 163 pages with maps, photographs, and table of contents. $3.50.

Arnold J. Toynbee and Edward D. Myers. **A Study of History Volume XI. Historical Atlas and Gazetteer.** Oxford University Press, 417 Fifth Ave., New York, 1959. 257 pages with maps, index to maps, and appendix. $12.50.

Dan Stanislawski. **The Individuality of Portugal.** The University of Texas Press, Austin 12, Texas, 1959. 248 pages with photographs, maps, bibliography, index, and table of contents. $5.00.

Patricia H. Suttles (editor). **Elementary Teachers Guide to Free Curriculum Materials,** 16th edition, 1959. Educators Progress Service, Randolph, Wis. xiv and 344 pages with title index, subject index, source index, and illustrative units. $6.50.

George W. Hoffman, M. G. Bowden, and Lorrin Kennamer. **Life in the Americas.** Work text, Teacher's edition. The Steck Company, Austin, Texas, 1959. 144 pages with photographs, maps, and table of contents. 68¢ list, 51¢ net.

Otis W. Freeman and H. F. Raup. **Essentials of Geography,** second edition, 1959. McGraw-Hill Book Company, Inc., New York. 543 pages with maps in black and white and color, diagrams, photographs, appendix, index, and table of contents. $7.75.

Jean Smith. **Find a Career in Conservation.** G. P. Putnam's Sons, 210 Madison Avenue, New York, 1959. 160 pages with photographs, glossary, index, and table of contents. For ages 11-15. $2.75.

Earl B. Shaw. **Anglo-America, A Regional Geography.** John Wiley & Sons, Inc., 440 Fourth Ave., New York, 1959. 480 pages with photographs, maps, diagrams, charts, questions, exercises, and problems selected references index and table of contents. $7.75.

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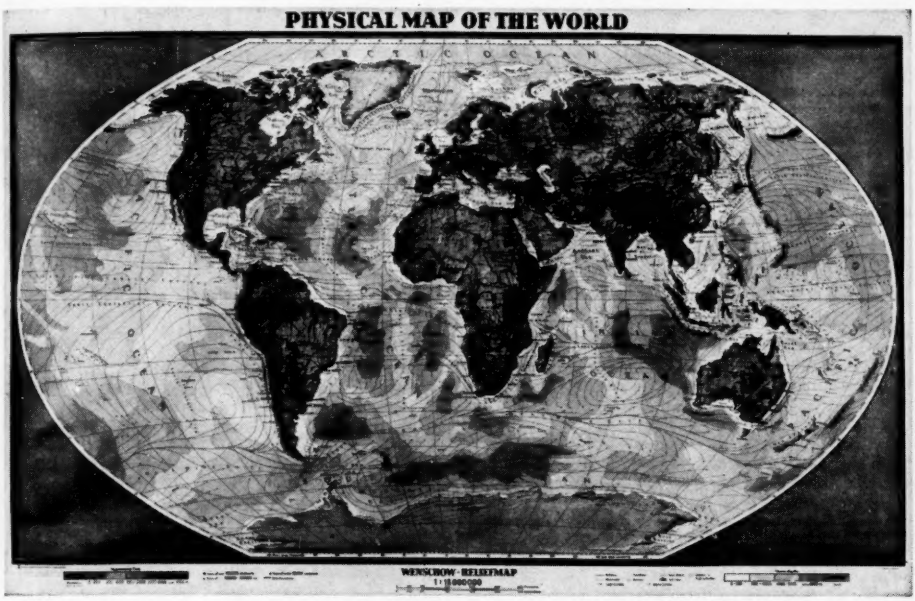

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